This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

A 435103

CHICAGO HIGH SCHOOLS

Digitized by Google

GENERAL LIBRARY of the
UNIVERSITY OF MICHIGAN

PRESENTED BY

A. F. Nightingale, Supt.
of High Schools m.d.

Digitized by Google

L
143
.C5
H9

Digitized by Google

PRESS OF
HACK & ANDERSON
CHICAGO

Digitized by Google

CHICAGO HIGH SCHOOLS.

SYLLABUS

OF THE

COURSE OF STUDY.

124140

Chicago Board of Education.

CHICAGO:
PUBLISHED BY THE BOARD OF EDUCATION.
1893.

Digitized by Google

OFFICERS OF THE BOARD OF EDUCATION.

JOHN MCLAREN, *President.*
D. R. CAMERON, *Vice-President.*
SHEPHERD JOHNSTON, *Secretary.*

COMMITTEE ON HIGH SCHOOLS.

D. R. CAMERON,
GEORGE L. WARNER,
GEORGE W. STANFORD.
THOMAS BRENAN.
WILLIAM H. BEEBE.

Superintendent of Schools, ALBERT G. LANE.
Superintendent of High Schools, A. F. NIGHTINGALE.

DISTRICT SUPERINTENDENTS.

District No. 1, ALFRED KIRK.
District No. 2, ELIZABETH L. HARTNEY.
District No. 3, EDWARD C. DELANO.
District No. 4, ALBERT R. SABIN.
District No. 5, JAMES HANNAN.
District No. 6, LESLIE LEWIS.
District No. 7, ELLA F. YOUNG.

SUPERINTENDENT OF HIGH SCHOOLS—OFFICE HOURS.

City Hall, Room 72.

Mondays, - - -	3:30 P. M. to 5 P. M.
Wednesdays, - -	1:30 P. M. to 5 P. M.
Saturdays, - - - -	9 A. M. to 12 M.

Digitized by Google

CHICAGO HIGH SCHOOLS.

The first High School was established in Chicago in October, 1856, and was known as the Central High School. It had a four years' course. Mr. Charles I. Dupee was Principal from 1856 to 1860, and George Howland from 1860 to 1881, when he became the Superintendent of the Public Schools of Chicago.

In 1875, three other High Schools were established, each with a two years' course, viz.: The West Division, corner Congress Street and Ogden Avenue; the South Division, corner Wabash Avenue and Twenty-sixth Street, and the North Division, corner Wells and Wendell Streets.

In 1881, the Central was discontinued, the two years' course in each of the other three abandoned, and a four years' course was adopted for the three High Schools, one in each division of the city. In May, 1889, the North-West Division was established, and occupied rooms in the Columbus School until September, 1892, when the new building, corner Potomac Avenue and Davis Street, was opened. The English High and Manual Training School, near the corner of Halsted and Monroe Streets, was established by action of the Board of Education August 20, 1890.

With the large accessions of territory to the city, by annexation, in 1889–90 there came within the province of the Board of Education seven other High Schools, viz.: Hyde Park High School, Fifty-seventh Street

-classed

Digitized by Google

and Monroe Avenue, established in September, 1869; the Englewood, Sixty-second Street and Stewart Avenue, established in 1870; the Lake View, Ashland and Graceland Avenues, established May 4, 1874; Lake, corner Matteson and Winter Streets, established September, 1884; Jefferson, at Mayfair, corner Washington and St. Johns Streets, established October 5, 1883; South Chicago, corner Ninety-third Street and Houston Avenue, established in 1882; Calumet, corner 81st Street and Wright Avenue, established in 1889.

All these schools, except the Manual Training, have a four years' course of study, which is identical in each school. The course at the Manual Training is three years.

Digitized by Google

PRINCIPALS OF THE HIGH SCHOOLS.

Central and West Division	CHARLES I. DUPEE, 1856–1860.
	GEORGE HOWLAND, 1860–1881.
	GEORGE P. WELLS, 1881–1889.
	GEORGE M. CLAYBERG, 1889–
South Division	JEREMIAH SLOCUM, 1875–
North Division	FRANCIS HANFORD, 1875–1876.
	HENRY H. BELFIELD, 1876–1883.
	OLIVER S. WESTCOTT, 1883–
North-West Division	FRANKLIN P. FISK, 1889–
Hyde Park	RICHARD F. KAY, 1869–1871.
	PLINY N. HASKALL, 1871–1874.
	MR. CLARK, 1874–1877.
	WYLLIS BENEDICT, 1877–1878.
	WM. G. BEALE, 1878–1881.
	MR. DEWEY, 1881–1883.
	WM. H. RAY, 1883–1889.
	W. A. MCANDREW, 1889–1891.
	C. W. FRENCH, 1891–
Englewood	IRA A. SHURTLEFF, 1870–1872.
	W. W. CARTER, 1872–1886.
	ORVILLE T. BRIGHT, 1886–1891.
	JAMES E. ARMSTRONG, 1891–
Lake View	A. F. NIGHTINGALE, 1874–1890.
	C. W. FRENCH, 1890–1891.
	JAMES H. NORTON, 1891–
Lake	JAMES HANNAN, 1884–1889.
	JAMES E. ARMSTRONG, 1889–1891.
	EDWARD F. STEARNS, 1891–
Jefferson	CHARLES A. COOK, 1883–
South Chicago	J. B. STRASBURGER, 1882–1885.
	LAURA J. POTTER, 1885–1886.
	SARA HUTCHINSON, 1886–1887.
	JOSEPH F. SWEET, 1887–1890.
	CHARLES I. PARKER, 1890–
Calumet	AVON S. HALL, 1889–

Digitized by Google

Digitized by Google

Syllabus of Course of Study.

Digitized by Google

Digitized by Google

Department of Language.

LATIN.

Digitized by Google

Digitized by Google

SYLLABUS OF THE LATIN COURSE.

INTRODUCTION.

The study of Latin extends throughout the entire four years of the High School course. This work aims to be helpful to two classes of pupils; first, those who will complete their formal education in the High School, and secondly, those who will enter college.

The dominant purpose in Latin instruction is to give the student such a grasp of the language that he shall have opened before him an ancient life and literature of incomparable interest. Other scarcely less important aims are the discipline of the mind in close and accurate observation and logical thinking, a certain definite power for linguistic study, an appreciation of the structure and syntax of one's own language, and the force of English words as seen in their Latin origins.

In accomplishing these ends certain definite things are kept in mind.

1. Paradigms must be intelligently and thoroughly learned. Endings should be compared, distinguished, classified.

2. A full and accurate vocabulary of the authors read is gathered.

3. Let attention be given to a correct, quantitative pronunciation, with care to the proper grouping of words and an expressive intonation.

Digitized by Google

4. The meaning of a Latin sentence is found by following the order of the Latin words.

5. The translation must preserve the thought of the author in close, idiomatic English.

6. Much writing in Latin of exercises based upon the text is required.

7. Translation at sight forms an important part of the work.

8. Oral and dictation exercises should be frequently given, that the pupil may learn to recognize the language *at hearing* as well as at sight.

9. The study of English derivatives should be persistent throughout the course.

10. The fact that the Latin lives to-day in the pupil's own speech and in the institutions that surround him, should be early impressed upon the pupil's mind.

FIRST YEAR.

1. *Pronunciation.*

a. The distinction between long and short vowels, both as to quantity and as to quality, should be carefully maintained from the outset.

b. The distinct pronunciation of consonants should be insisted upon.

c. Where quantity is caused by the sequence of two consonants or a double consonant after a vowel, as in the accented penult of *viginti*, the quantity of the vowel and the quantity of the syllable should not be confused.

2. *Inflection.*

a. All the commoner forms of inflection must be thoroughly learned during the first year.

Digitized by Google

b. The separate significance of stem and ending should be taught.

c. The various sets of endings should be committed separately.

d. The endings of verbs should be analysed as to conjugation, mood, tense, person, number, and voice.

e. The distinction between root and verb stem, and the methods of forming present, perfect, and supine stems should be taught.

f. The similarities between the endings of the different declensions and conjugations should be noted.

g. Verbs should be divided into systems as present, perfect and supine, and synopsized accordingly.

h. All paradigms and endings should be learned with an accurate regard for quantity, and in all written work long vowels should be carefully marked.

3. *Vocabulary.*

a. Words are memorized as far as possible when first met and used in the lessons.

b. Kindred words in Latin and in English should be pointed out.

c. Brief idiomatic expressions of frequent occurrence should be memorized.

d. Principal parts must be learned.

4. *Syntax.*

a. The more common usages of the cases and the moods must be mastered during the first year.

b. Pupils should be taught to see the various possibilities of case or mood construction in a given instance.

c. Latin and English idioms should be compared.

Digitized by Google

5. *Translation and Reading.*

a. In all final renderings, whether from Latin into English or from English into Latin, translation from idiom to idiom and not from word to word is insisted upon.

b. Pupils must be trained to understand sentences in the order of the Latin words.

c. Oral and written translations from English into Latin are emphasized.

d. Review sentences and simple advance sentences are translated at hearing.

e. Exercises in the translation at sight of simple selections are frequently given.

f. Constant care should be given to the expressive reading of the Latin text—the mere pronunciation of words is futile.

6. *Synopses.*

a. At the end of the first year the pupil should be required to systematize and to tabulate the results of his work in etymology and syntax.

SECOND YEAR.

Required author—Cæsar.

1. *Limits.*

a. First term (previous to Christmas). The Helvetian war. (B. G. Bk. 1, Ch. 1–29).

b. Second and third terms. Bk. 2, the remainder of Bk. 1, Bks. 3 and 4, in the order indicated.

c. It is expected that classes will complete the four books.

2. *General Statements.*

a. Very much of the pupil's later progress will depend upon the way the first term's work is done. Thor-

Digitized by Google

oughness, accuracy, and attention to all details characterize this work.

b. Inflections are reviewed until the pupil recognizes forms instantly.

c. Irregular forms occurring in the text, which were not learned during the first year, are taught.

d. Unusual difficulties are explained in advance, particularly during the first term.

e. Common idioms are memorized.

f. The proper reading of the Latin is a fairly good test of the pupil's understanding of the meaning.

3. *Vocabulary.*

a. The new words in each day's lesson should be learned and remembered. Nine-tenths of the words met should become the permanent possession of the pupil.

b. Pupils should be led to discover the meanings of words through their derivation and association, without constantly referring to the vocabulary.

c. The meaning of the word carried in the mind, should be its strict etymological signification.

4. *Syntax.*

a. The noun constructions of the first year are reviewed and new ones taught as they appear.

b. The constructions of participles, infinitives, supines, gerunds, and gerundives must receive careful attention.

c. The uses of the Subjunctive and the laws of Indirect Discourse are to be taught.

d. Passages of Indirect Discourse are turned into Direct Discourse.

Digitized by Google

5. *Translation.*

a. The Latin order is observed and constructions anticipated in getting the meaning of a passage.

b. In the advance, a literal translation of *difficult* passages is allowable; in the reviews, idiomatic English must be required.

c. Translation of sentences *heard but not seen* should form frequent, if not daily exercises. Material for such exercises may be found in the text read, or parts of Cæsar not read. "Gradatim" offers a pleasant and profitable diversion.

6. *Latin Prose.*

a. Exercises based upon the text read are used.

b. Such exercises may form a part of each recitation, or distinct recitations at regular intervals.

7. *History, Etc.*

a. The historical allusions in the text are investigated in the light of the history of the times.

b. The geography of Gaul is taught. The ancient map is compared with the modern.

c. The military system of the Romans should be taught, in so far as it bears upon the text.

d. At the end of the second year, pupils should be well grounded in the more important principles of Latin syntax and of the Latin method of expressing thought, and should be able to translate simple Latin at sight.

THIRD YEAR.

Required author — Cicero.

1. *Limits.*

a. The four orations against Catiline, the Manilian Law and two or three others selected by the teacher, will be read.

Digitized by Google

2. *General Statements.*

a. The work of the previous years in etymology and syntax should be reviewed.

b. New noun and verb constructions are studied, and the whole matter of syntax arranged and tabulated in the pupil's mind.

c. Resemblances and contrasts between Cæsar's and Cicero's style are pointed out so far as is practicable.

d. The history of Cicero's time is studied in the light of the orations read.

e. Something of the theory of the Roman government is taught.

f. The more forcible parts of the orations are read and studied as specimens of oratory.

g. Some choice passages are memorized.

3. *Vocabulary.*

a. New words and idioms are memorized, and lists of words of common occurrence are given.

b. Some study of synonyms is made.

4. *Translation.*

a. Clear cut, idiomatic English must be insisted upon, and a perceptible growth in fluency of translation is expected.

b. Translation at sight and at hearing, forms an important part of the work, especially during the last half of the year.

5. *Latin Prose.*

a. Exercises based upon the text, as in Cæsar, are used. Somewhat connected passages are given.

FOURTH YEAR.

Required author—Vergil.

1. *Limits.*

a. The Æneid, Bks. 1–6, and the Bucolics.

Digitized by Google

b. Some other Latin poetry may be substituted for the Bucolics, or read in addition.

2. *General Statements.*

a. The main aim is to develop a taste for and a love of the Æneid as a great masterpiece of literature.

b. Work in inflections, syntax, etc., is not neglected, but has a subordinate place.

c. Poetic constructions are contrasted with corresponding prose constructions.

d. Choice passages of a few lines are memorized.

3. *Scanning and Related Matters.*

a. The matter of first importance is to read the verse quantitatively with such intonation as to give the meaning.

b. The structure of the hexameter verse is thoroughly studied.

c. The ability to scan (read metrically) easily and accurately is gained.

4. *Figurative Language.*

a. A somewhat careful study of the more common figures of etymology, prosody, syntax and rhetoric is made.

b. An appreciation of figurative language and of its force in the English translation is developed.

5. *Mythology.*

a. The myths alluded to in the text are discussed, and their force in the poem pointed out.

b. The large use of mythological tales in English literature should be noted.

6. *Translation.*

a. The translation should be free and should preserve the spirit of the poem.

Digitized by Google

b. A great deal of translation at sight and hearing should be done.

7. Latin Prose.

a. Latin prose should consist of exercises based upon prose authors, which may or may not have been read, and should be a general review test of the pupil's knowledge of Latin accidence and syntax, and his retention of the vocubulary learned.

Digitized by Google

Digitized by Google

GREEK.

Digitized by Google

Digitized by Google

SYLLABUS OF THE GREEK COURSE.

The work in Greek extends, as a daily exercise, through the last three years of the High School. The object of this course is to give the pupils who elect Greek a thorough classical preparation for college. The aim of the instruction, therefore, is to give such facility in reading Greek that later studies can profitably be devoted to the literary form of the language, and to Greek life and thought as reflected in Greek literature. It is remembered, too, that the Greek, in itself, furnishes a most perfect and most finished instrument for expressing thought, and, therefore, the best basis for a careful training of the mind in clear, accurate and logical thinking.

In carrying out these aims certain definite things are kept in mind.

1. The language is studied inductively so far as practicable, whenever feasible grammatical facts and laws are discovered from the text, and not from the grammar.

2. Constant comparison is made with the Latin, which precedes the study of Greek one year, in forms, vocabulary and syntax.

3. Paradigms are intelligently learned; endings are compared, classified and distinguished.

4. These paradigms are constantly reviewed, orally at the blackboard, by turning English into Greek, until

Digitized by Google

they become the pupil's permanent possession, ready for use.

5. The meaning of the Greek sentence is grasped in the order of the words in the text.

6. The translation preserves this order so far as may be, but insists always upon orderly idiomatic English.

7. Reading at sight and at hearing of the simple parts of the authors read, form important exercises.

8. The debt that every civilization owes to the Greek is brought out by attention to the subject matter read, and constant reference to the imitations of Greek habits of thought and civil and political institutions, seen in our own civilization, and in that of the ancient Romans.

9. The fact that the Greek is the spoken language to-day of a people of no mean civilization is not forgotten.

FIRST YEAR'S WORK.

Forty weeks—five hours a week.

1. *Limits.*

   The "Greek Lessons" with three or four chapters of the first book of the Anabasis.

2. *Pronunciation.*

   a. The vowels are given the so-called continental sounds.

   b. The distinction in sound between the long and the short vowels is preserved in the doubtful vowels (a, i, u) as well as in those long and short by nature.

   c. The consonants are given in general the sounds of their English equivalents, care being taken to sound distinctly both parts of the doubtful consonants. Zeta is given the sound of ds.

Digitized by Google

d. The written accent determines the syllable upon which stress of voice is laid.

3. *Declensions.*

a. The case-endings are taught as carrying some meaning apart from the stem to which they may be attached.

b. The several declensions are compared and taught as variations of a common type.

c. The distinction between vowel and consonant declensions is emphasized.

4. *The Verb.*

a. Verb forms are analyzed into their component parts, viz.: Augment, stem, mood and tense signs, connecting vowel, personal endings.

b. The function and meaning of each of these parts is taught.

c. New verb forms are then constructed synthetically.

d. The Omega and Mi verbs, second tenses, the future and aorist of liquid verbs, the present and imperfect of pure contract verbs, and many other seeming irregularities are found to be only modifications of the regular form.

e. The several stems of the verb are taught from which the tense systems are developed.

f. The different ways of forming the present stem from the simple, or verb stem, are classified.

5. *Syntax.*

a. Noun constructions. Very large use is made of the corresponding constructions in Latin, but differences as well as resemblances are pointed out and emphasized.

Digitized by Google

b. Verb contractions. The various uses of the moods and tenses are compared with Latin, and brought together in tabulated form.

6. *General Statements.*

a. Large use is made of the blackboard in all work in Greek and pupils are taught to write a clear Greek hand.

b. Accent, euphony, contraction, and other matters pertaining to the written or spoken form of the language receive attention from the outset, and are impressed by constant use.

c. The derivation and composition of words, and their formation from simple stems are constantly emphasized.

d. Great care is taken to acquire an accurate and moderately extended vocabulary. Words of kindred origin and meaning are arranged in groups for word study and for more facile retention.

SECOND YEAR'S WORK.

Forty weeks—five hours a week.

1. *Limits.*

The first book of Xenophon's Anabasis is completed and the three succeding are read.

2. *General Statements.*

a. Attention to all details characterizes the work of the first part of the year, and thus a systematic review of the etymological and syntactical work of the first year is made.

b. Attention is given to reading aloud the more spirited and oratorical portions of the text.

A marked feature of the work is acquiring a vo-

Digitized by Google

cabulary. Lists of words found more than a given number (10) of times in the portion of the Anabasis read, are memorized.

3. *Translation.*

a. The aim is to have the pupil get the meaning of a sentence word by word, or group of words by group, in the order in which it is written. The final translation, however, is from idiom to idiom and into clear, concise English.

b. Much is done in reading at sight and hearing, particularly during the last half of the year. Entire chapters are thus read and then such portions as present difficulties or peculiarities are discussed in detail.

4. *Syntax.*

a. The noun constructions are systematized and taught in groups.

b. The various uses of the subjunctives, Optative, Infinitive and Participles, are taught by gathering examples and arranging them in groups according to similarity of construction.

5. *History and Related Topics.*

a. So much Greek history is emphasized as is necessary to a good understanding of the bearing of the expedition of the ten thousand upon subsequent history.

b. Something of Persian life and civilization is taught.

c. The Greek and Persian military systems are compared.

6. *Prose Composition.*

Exercises based upon the text read are turned into Greek as a part of the daily recitation, or are

Digitized by Google

taken up at intervals after a given amount of the text has been read.

THIRD YEAR'S WORK.

Forty weeks — five hours a week.

1. *Limits.*

The first three or four books of Homer's Iliad.

a. The great aim is to cultivate a love for, and an interest in the Iliad, as a poem and as literature.

b. An effort is made to grasp Homer's vocabulary by giving lists of words of frequent recurrence, studying the derivation and composition of words, and various other devices.

3. *Homeric Forms.*

a. The "Homeric forms" are very carefully studied, especially in the early part of the work, and compared with the corresponding Attic forms.

b. These forms are systematically arranged by declensions, and related verb forms, that they may be the more readily recognized.

4. *Scanning.*

a. The structure of the hexameter verse is carefully studied.

b. The ability to scan easily and accurately with attention to the meaning as well as metrical form of the verse is gained.

c. The metrical peculiarities receive attention.

5. *Syntax.*

a. The prose constructions are reviewed and the poetic constructions carefully compared with the prose expressions for such constructions.

b. The uses of the moods, especially in the condition, are contrasted with the same uses in prose.

Digitized by Google

6. *Translation.*
   a. The aim is to "Be Homeric," concise, clear, simple, preserving as far as possible the order of the words and the constructions of the original.
   b. Attempts are now and then made at metrical, preferably hexameter, translations.
   c. Reading at sight forms an important part of the work during the last half of the year. Whole books may thus be read, and then reviewed as prepared work.
7. *History and Mythology.*
   a. The life and habits of Homeric heroes are discovered.
   b. An attempt is made to study systematically the myths alluded to in the text.
   c. The force of the myths and legends from a poetic point of view is noted.
8. *Prose Composition.*

   Prose work based upon the Anabasis is continued and supplemented during the last part of the year by the Greek prose passages from the entrance examination papers of various Colleges, and such simple English prose as will aid in a final review of the course in Greek.

Digitized by Google

Digitized by Google

GERMAN.

Digitized by Google

Digitized by Google

SYLLABUS IN GERMAN.

The study of the German Language may be commenced by pupils in the General Course the first or the third year.

College preparatory pupils may substitute it for Greek the last three years, or take it the last two years in addition to Latin and Greek.

BOOKS USED.

Joynes-Meissner German Grammar required throughout the Course.

For advanced work in Grammar, Wetzel's Grammatik may be used.

Zimmerman's Classical Reader (Elective).

Each pupil is to be supplied with a German English Dictionary, (Heath's New German Dictionary preferred).

Stern's Studien und Plaudereien.

Appleton's Readers (for translation from English into German).

DIVISION OF TIME.

BEGINNER'S COURSE.

Pupils who have not studied German prior to attending the High School, are to pursue this Course.

Digitized by Google

The first year will be devoted to conversational exercises and readings from Stern's Studien und Plaudereien.

The latter part of the year the grammar will be studied.

The second year, in addition to above, translation from English into German. Reading from Classical Reader.

German Composition. Essays.

Third and fourth years, study of German Classics and Literature in addition to Grammar and conversation.

ADVANCED COURSE.

Pupils who have studied German in the Grammar Grades, may pursue the following course:

The study of the Grammar will be commenced in the first year and continued throughout the four years of the Course.

Classes completing the study of the prescribed Grammar, may take up advanced work in Grammar.

Conversational exercises to be based upon work studied during the Course.

Translation from English into German throughout the four years.

Study of the History of German Literature in connection with the historical and biographical sketches found in parts III. and IV. of Reader.

German composition, letter-writing and critical essays on literary subjects.

READINGS.

Selections may be made from the following reading course:

Digitized by Google

First and Second Years:

Weil's Ali Baba.
Andersen, Bilderbuch ohne Bilder.
Meissner, Ans Meiner Welt.
Storm, Im Saal.
Hillern, Höher als die Kirche.
Leander's Träumereien.
Jensen, Braune Erica.
Putlitz, Vergissmeinnicht.
Stöckl, Unter dem Weihnachtsbaum.
Wilhelmi, Einer muss heirathen.
Gerstaecker, Irrfahrten.
Schiller, Wilhelm Tell.

Third and Fourth Years:

Putlitz, Was sich der Wald erzahlt.
Storm, Psyche.
Benedix, Eigensinn,
Hauff, Das kalte Herz.
Riehl, Der Fluch der Schönheit.
Moser, Bibliothekar.
Max Mueller, Deutsche Liebe.
Heyse, Anfang, und Ende.
Die Einsamen.
L' Arrabbiata.
Auerbach, Auf Wache.
Ebers, Eine Frage.
Stifter, Das Haidedorf.
Scheffel, Ekkehardt.
Mueller, Die elektrischen Maschinen.
Koerner, Zriny.
Schiller, Jungfrau von Orleans.
Maria Stuart.

Digitized by Google

Schiller, Neffe als Onkel.
Lessing, Minna von Barnhelm.
Nathan der Weise.
Goethe, Hermann und Dorothea.

Additional selections may be made to the foregoing list by the Superintendent when required by institutions for which pupils may be preparing.

Digitized by Google

FRENCH.

Digitized by Google

Digitized by Google

SYLLABUS IN FRENCH.

The French Language may be commenced by pupils in the general course the first or third year.

College preparatory pupils may substitute it for Greek the last three years, or take it the last two years in addition to Latin and Greek.

BOOKS USED.

Keetel's French Grammar is required throughout the Course.

For advanced Grammar work, Whitney may be used.

Each pupil is to be supplied with a French English Dictionary. Spiers & Surenne (School Edition) preferred. For special verb work, Hennequin's French verbs may be used.

DIVISION OF TIME.

The first term of the first year will be devoted to the study of the Grammar.

Reading will commence at the beginning of the second term of the first year.

All recitations of advanced pupils are to be divided so as to give equal periods to Grammar, conversation and reading.

All questions and answers should be given in French as far as practicable.

Digitized by Google

READINGS.

Selections from the following reading course are to be made by the authority of the Superintendent.

First Year:

Perrault, Contes de Fées.
About, La Mere de la Marquise.
Halévy, Un Mariage d' Amour.
Ohnet, Le Chant du Cygne.
Daudet, Le Siège de Berlin, (Edition with Grandgent's English Exercises).

Second Year:

Erckmann-Chatrian, L' Ami Fritz,
Enault, Le Chien du Capitaine.
Labiche, Le Voyage de Monsieur Perrichon.
Comte de Vervin, Deux Artistes en Voyage.
Rougemont, La France.
Sandeau, Mademoiselle de la Seigliere.
Lavisse, Histoire de France, Reference Book.
Erckmann-Chatrian, Le Conscrit de 1813.
de Lamartine, Jeanne d'Arc.
English to French.

Third Year:

Revue des Deux Mondes, La Neuvaine de Colette.
Dumas, La Tulipe Noire.
Julliot, Mademoiselle Solange.
de Lamartine, Graziella.
Geo. Sand, La Mare au Diable.
Prosper Mérimée, Colomba.
Xavier de Maistée, Voyage autour de ma Chambre.
Hugo, Bug Jargal.
Fontaine, Historiettes Modernes.
English to French.

Digitized by Google

Fourth Year:

Hugo, Hernani,
Racine, Athalie, Andromaque.
Esther, Iphigénie.
Molière, L' Avare.
Hugo, Quatre-vingt-treize.
Corneille, Le Cid, Horace, Cinna.
Victorien Sardou, La Perle Noire.
Hector Malot, Sans Famille.
de Maupassant, Contes et Nouvelles.
Molière, Le Bourgeois Gentil-homme.
Le Médecin Malgré Lui.
English to French.

Should selections other than the above be required for admission to college, they may be added to this list at the discretion of the Superintendent.

Digitized by Google

Digitized by Google

Department of Mathematics.

ALGEBRA.

Digitized by Google

Digitized by Google

SYLLABUS IN ALGEBRA.

Forty weeks—four recitations a week. Text Book in use, Milne's High School Algebra.

The amount of work to be done in the first year, if well done, will be sufficient for admission to most colleges and universities. Should an additional amount be required, advanced classes will be formed later in the Course.

FIRST TERM—SIXTEEN WEEKS.

Addition, Subtraction, Multiplication, Division, Factoring, Simple Equations with problems involving their use. Page 9 to page 88.

Let the class work in Algebra be preceded by a lecture on the history of Algebra, and its purpose in a course of study.

Algebraic language, with its various terms and symbols, must be made familiar to pupils. As each new subject is begun, require careful observation of the points of resemblance to, and of difference from familiar arithmetical work, leading the pupil from the known to the unknown.

"Make haste slowly" in the earlier work, as the unfamiliar x, the equation and the negative quantity must be clearly understood. The balance will be found useful in illustrating the equation and a reference to the thermometer and to the idea of debt will aid in the comprehension of the negative quantity. Olney, Bowser and Lilley may be consulted for a clear treatment of the latter subject.

Digitized by Google

In Subtraction, the underlying principles, (p. 29) and the use of the parenthesis should be emphasized.

In Multiplication, the reason for addition of exponents and for the sign of the product must be made clear. Dwell on special methods of abbreviating the work.

In Division insist on care in use of signs, and call attention to the number of terms in the quotient in short division. Careful study of easy literal equations (as on p. 66) will be repaid by ease in later work.

Factoring should be emphasized. It has been called "the backbone" of Algebra, and at least five weeks' work — twenty lessons — should be devoted to it with an average class. The square of the sum of two quantities, the square of the difference of two quantities, the product of the sum and difference, and the method of factoring the quadratic trinomial are especially important; also the divisibility of the sum of the same powers of two quantities, and of their difference. (Pp. 83, 84, 85.) By illustrative drawings and by assigning values, show the difference between $x^2—y^2$ and $(x—y)^2$ which are often confused by pupils.

Extra time spent on factoring is time gained on fractions.

Excellent work in this line in a different form will be found in Wentworth's Algebra.

Principles thoroughly understood are great aids in the work.

SECOND TERM — SIXTEEN WEEKS.

Common Divisors, Common Multiples, Fractions, Simple Equations, involving two or more unknown quantities. Involution and Evolution, page 88 to page 199. Addition and Subtraction of fractions will require a

Digitized by Google

mastery of the subject of Lowest Common Multiple. Much attention should be given to clearing equation of fractions. Lead to algebraic processes by the use of arithmetical operations.

Illustrative drawings and objects will be found useful in enabling pupils to realize the conditions of problems.

Invention will aid in the comprehension of the more difficult problems. Encourage pupils to make problems similar to those already solved, and submit these to the class. By this course mastery of the difficulty is not only assured to the originators, but frequently also to the slower members of the class, by means of the enthusiastic interest aroused. Originality in solutions should be encouraged. Much time, patience and frequent repetition will be necessary in dealing with this subject, which has been called "the thought side" of Algebra.

In simultaneous equations the method by Substitution, being somewhat familiar, may perhaps be taken first to advantage, and followed by comparison and then by Addition and Subtraction, although the latter method is first desired in some classes.

In Involution, the Binomial Theorem should be emphasized and selections may be made from the fuller treatment of the subject, page 347 to page 352.

In Evolution use only enough numerical work to give pupils working power.

It may be necessary to omit some examples under many topics with classes of less than average ability. If time proves too limited omit part of Theory of Exponents.

Thoroughness rather than a large amount of work,

Digitized by Google

should be the aim of the teacher, and time should be devoted to individual members of a class, needing special attention.

The teacher will find many excellent problems in Wells and in Davies Bourdon, and Todhunter may be consulted for fractional work.

THIRD TERM — EIGHT WEEKS.

Radical quantities, Radical Equations, Quadratic Equations (omitting Properties of Quadratics), Selections from Review.

Pages 199 to 256 with portions of work included between page 288 and page 299.

Radicals will require special attention. Ten or twelve lessons, at least, should be devoted to this subject, which presents many difficulties to the average pupil.

Make each day's work during the school year include review of previous difficulties and there will be little need of a general review at the close of the year.

Teachers are recommended to consult Loomis and J. Hamblin Smith, an English author, for interesting work in Radicals. A novel presentation of many subjects will be found in Jones' Drill Book.

Although the Algebra in use contains an abundance of material, the different methods of presentation adopted by these authors will be of service in developing thought, and ensuring recognition of familiar ideas, though in unaccustomed garb. A true teacher will aim to secure clearly defined thought and accurate expression in every recitation in Algebra, thus aiding the pupil in acquiring mastery of that complete instrument, the English language, which has been called the only essential to a liberal education.

Digitized by Google

GEOMETRY.

Digitized by Google

Digitized by Google

SYLLABUS IN PLANE GEOMETRY.

INTRODUCTION.

While perhaps no science surpasses Geometry in the variety of its practical applications, it is placed in the curriculum of our schools chiefly for the mental discipline which its correct study insures. It is an invaluable aid in the cultivation of the habits of attention and accuracy. A careful and intelligent following of the lines of argument laid down in a demonstration demands a continuity and concentration of thought, which strengthens the mental grasp of every subject. After acquiring some knowledge of the language of this science and of the methods pursued in geometrical reasoning, the pupil must be encouraged to work out demonstrations and constructions for himself, and these exercises will greatly increase the value of the study, in the development of the reasoning faculty, and impart an appreciation of an orderly arrangement of thoughts and the value of concise and exact language. The pupil also acquires the habit of demanding of himself clear ideas and definite knowledge. He soon discovers that certain facts are of necessity related to certain other facts, that certain conclusions and those only can be reached from certain conditions, and that to see these relations and to apply them is the secret of successful argument.

Weighing and comparing statements as to their value and their utility in an argument, drawing conclusions from premises established or data given, and generaliz-

Digitized by Google

ing from these, must develop a power of correct judgment which is helpful in all the labors of life.

PLAN OF WORK.

Second year, forty weeks — four recitations a week.

FIRST TERM — SIXTEEN WEEKS.

a. Definition.
b. The straight line.
c. Parallel lines.
d. Perpendicular and oblique lines.
e. Loci.
f. Triangles.
g. Quadrilaterals.
h. Polygons in general.
i. Arcs and chords.
j. Tangents.

ORIGINAL WORK.

a. Exercises in connection with the theorems involving the properties named with special reference to groups of equal angles, equal triangles and equal lines.
b. Numerical problems.

TIME.

Theorems, two-thirds of the time. Original work, one-third of the time.

SECOND TERM — SIXTEEN WEEKS.

I.

a. Doctrine of Limits (optional).
b. Measurement of angles.
c. Problems of construction.

Digitized by Google

ORIGINAL WORK.

a. Theorems and constructions involving the use of arcs, chords, and tangents.
b. Constructions involving the properties of the equilateral triangle, isosceles triangle, right triangle, scalene triangle, rectangle, rhombus, rhomboid, trapezoid and circle.
c. Loci—selected exercises.

II.

a. Theory of Proportion.
b. Proportional lines.
c. Similar triangles.
d. Similar polygons.
e. Numerical properties of figures.
f. Problems of construction.

ORIGINAL WORK.

a. Exercises involving the principles of proportion, similar triangles, and similar polygons.
b. Constructions involving the principles of proportion.
c. Numerical exercises.

III.

a. Areas of Polygons.
b. Comparison of polygons.
c. Problems of construction.

ORIGINAL WORK.

a. Selected Theorems.
b. Problems of construction.
c. Numerical exercises.
d. Transformations.

Digitized by Google

TIME.

Theorems, one-half of the time. Original work, one-half of the time.

THIRD TERM — EIGHT WEEKS.

a. Regular polygons and circles.
b. Problems of construction.

ORIGINAL WORK.

a. Theorems involving the properties of regular polygons and circles.
b. Numerical exercises.
c. Problems.
d. Reviews covering the entire work of the year together with miscellaneous exercises and problems.

TIME.

Theorems, one-third of the time. Original work, two-thirds of the time.

SOLID GEOMETRY, PLANE TRIGONOMETRY, AND HIGHER ALGEBRA.

Pupils who may desire to pursue the study of Mathematics beyond the second year, as a better preparation for college, or because of a mathematical taste, will be permitted to take Solid Geometry and Plane Trigonometry four days a week during the first half of the third year, and Higher Algebra during the last half of the same year. The more important principles of the first year's work in Algebra will be briefly reviewed, and Milne's text-book finished.

Digitized by Google

Department of Science.

BIOLOGY.

Digitized by Google

Digitized by Google

INTRODUCTION.

The chief aims in the elementary science courses of the High School are three-fold: First, to develop in the pupil the power of independent, accurate and systematic observation; secondly, to aid him in acquiring the ability to describe clearly and concisely the facts of his own observation and study; thirdly, to teach him to correllate facts observed and draw fron them logical inferences and conclusions, thus leading him into self-reliance and independence of thought.

The method of instruction is inductive and rests upon the individual observation of the pupil. The aim is to develop rather than inform; hence the laboratory method of study is more important than the information involved. Accuracy in observation is a prerequisite to accuracy and clearness in description or statement, and these must precede logical inference and conclusion.

Biology is the first science study of the High School curriculum and is planned as a continuous year's work. It is placed upon a laboratory basis, and so far as its chief, that is to say, disciplinary aim is concerned, it affords a preparation for subsequent science study. In the scope of its subject-matter, it embraces the study of typical representatives of the chief groups of animals and plants. The special line along which observation is directed is the structure and comparative morphology of the types introduced. The subjects of classification

Digitized by Google

and geographical distribution enter into this course only to a very limited extent, and that of embryology and physiology in the strict sense, are practically omitted. However, the subject of physiology in its usually accepted sense, receives a considerable amount of attention in a comparative way.

In addition to the principal, or disciplinary aim, as already defined, this course seeks to develop and foster an abiding interest in Nature; it aims to cultivate a love for Nature's forms, and laws and teachings.

THE METHOD OF LABORATORY WORK.

Of equal importance with a laboratory and its equipment, is a method or plan by which it is made possible for one instructor to direct the work of a large class of pupils at the same time. This is made possible by providing each pupil individually with both material for study, and a copy of a guide or manual which will direct him in his work. The class being so provided, the instructor is free to render such individual assistance in the technique and execution of the work, as may be necessary.

The pupil studies the material as directed in his outline, and notes the facts of his observations and the conclusions drawn from them. His notes, illustrated by numerous sketches, or drawings of the structures studied, are subsequently cast into clear, concise, and connected statements which constitute a description of the plant or animal under consideration.

Careful drawings are also made upon a standard drawing paper, the aim of which is to bring under observation or represent a summary of the principal struc-

Digitized by Google

tural characteristics of the type studied. The sketches and drawings should therefore be diagrammatic, clear and distinct in outline, without any attempt to represent light and shade or to produce artistic effect.

The course requires only a relatively small amount of dissection, and this is done principally upon the higher invertebrate and lower vertebrate forms, and upon plants. The dissection of types above the Frog is not required of pupils, but temporary or permanent preparations made by the instructor are used in demonstration.

DIVISION OF TIME.

The laboratory work constitutes the basis of the course as already stated, and receives at least half of the aggregate amount of time allotted to recitations. Two recitation periods per week are given to laboratory work, and two to other work. Of the latter, one lesson per week is a recitation or quiz upon previous work in the laboratory and is supplemented by lectures and demonstrations; the other is a recitation upon collateral study from text-book and works of reference.

The following list shows the branches, or groups of animals and plants represented in the course, and the types selected for laboratory study. In each instance the type first named is preferred, but for good reason any other named in the list may be used instead. The figures to the right of the respective groups, indicate the number of weeks to be devoted to the study of each group.

Digitized by Google

A LIST OF GROUPS WITH ALTERNATIVE TYPES FOR LABORATORY STUDY.

Animal Types.

I. Protozoa (*1*).
- *a.* Amœba.
- *b.* Paramœcium.
- *c.* Vorticella.
- *d.* Rhizopod.

II. Porifera (*1*).
- *a.* Spongilla (Fresh-water Sponge).
- *b.* Any marine sponge.

III. Cœlenterata (*2*).
- *a.* Hydra (Fresh-water Hydra).
- *b.* Hydrozoa.

IV. Echinodermata (*2*).
- *a.* Starfish.
- *b.* Sea-urchin.

V. Vermes (*2*).
- *a.* Earthworm.
- *b.* Leech.
- *c.* Tapeworm.
- *d.* Liver-fluke.

VI. Crustacea (*2*).
- *a.* Crayfish.
- *b.* Lobster.
- *c.* Sow-bug.
- *d.* Cyclops.

VII. Insecta (*2*).
- *a.* Grasshopper.
- *b.* Beetle.
- *c.* Moth
- *d.* Bee.
- *e.* Fly.

VIII. Mollusca and Molluscoidea (*2*)
- *a.* Clam.
- *b.* Snail.
- *c.* Bryozoa.

IX. Pisces (*2*).
- *a.* Perch.
- *b.* Any bony fish.

X. Amphibia (*2*).
- *a.* Frog.
- *b.* Salamander.

XI. Reptilia (*2*).
- *a.* Turtle.
- *b.* Snake.

XII. Aves (*2*).
- *a.* Pigeon.
- *b.* Any bird.

XIII. Mammalia (*2*).
- *a.* Cat.
- *b.* Rabbit.

Plant Types.

XIV. Protophyta (*1*).
- *a.* Protococcus.
- *b.* Oscillaria.
- *c.* Nostoc.
- *d.* Yeast.

XV. Zygophyta (*1*).
- *a.* Pand-Scum (Spirogyra).
- *b.* Water Flannel(Cladophora)
- *c.* Black Mould (Mucor).

XVI. Oöphyta (*1*).
- *a.* Green Felt (Vaucheria).
- *b.* Rockweed (Fucus).
- *c.* Fly-Fungus (Saprolegnia).

XVII. Carpophyta (*1*).
- *a.* Stone wort (Nitella or Chara).
- *b.* Wheat Rust (Puccinia).
- *c.* Cup Fungus (Peziza).

XVIII. Bryophyta (*1*).
- *a.* Liverwort (Marchantia).
- *b.* A Moss (Funaria).

XIX. Pteridophyta (*2*).
Horsetail (Equisetum).
- *a.* Fern (Pteris).
- *b.* Any other Fern.
- *a.* Large Club-Moss (Lycopodium).
- *b.* Little Club Moss (Selaginella).

XX. Gymnosperma (*1*).
- *a.* Scotch Pine.
- *b.* Any other Pine.

XXI. Angiosperma (*4*).
- *a.* Trillium.
- *b.* Any other Monocotyledon.
- *a.* Phlox.
- *b.* Any other Dicotyledon.

XXII. Plant Analysis (*4*).

Digitized by Google

Animal Types.

I. The Amœba. *As a type of unicellular animals.*

A. Laboratory Work:

a. The general appearance, size, and structure.

b. The nature of the Amœba body and the peculiarities of a unicellular animal.

c. The changes in Amœba and their significance.

d. The absence of organs and the method of its physiology.

e. The simple mode of reproduction and the absence of a natural death.

f. Drawings of Amœba.

B. Other Work:

a. The characteristic properties of protoplasm.

b. The essential elements and nature of a cell.

c. The general functions performed in the animal body.

d. The characteristics of Gregorina and Paramæcium.

e. Comparison of Amœba, Gregorina and Paramæcium with reference to their morphology, physiology, habits and reproduction.

f. The parasitic habits of Gregorina and the nature of a parasitic animal.

g. The characteristics and the classes of Protozoa.

II. The Fresh-water Sponge. *As a type of unicellular animals loosely associated in a colony.*

A. Laboratory Work:

a. The morphology of the amœboid elements or individuals in the sponge colony.

b. The relation and arrangements of cells.

Digitized by Google

c. The spicules as a common skeleton or framework of the colony.

d. The structure and nature of the "gemmules."

e. Drawings of Amœboid cells, spicules and "gemmules."

B. Other Work:

a. The anatomy of the sponge colony.

b. The specialization of cells and a physiological division of labor.

c. Non-sexual reproduction, and the simplest form of sexual reproduction by two specialized cells of different nature.

d. The character of calcareous, horny and siliceous sponges.

e. The source and use of the sponge of commerce.

f. The characteristics and the classes of Porifera.

III. The Hydra. *As a type of a true multicellular animal in the simple gastrula form.*

A. Laboratory Work:

a. The form, structure and plan of the Hydra body.

b. The nature of the digestive cavity and the two cell-layers of its walls.

c. The typical cell in the Hydra body and its various modifications with corresponding functions.

d. Drawings of Hydra, including its various forms of tissue.

B. Other Work:

a. The common origin of the two cell-layers of the body-wall.

b. The specialization and functions of ectoderm and endoderm.

Digitized by Google

c. Demonstration of the simplest form of muscular and nervous cells.

d. The two-fold method of reproduction and a comparison of each with reproduction in Amœba and Spongilla.

e. Comparison of Hydra with types already studied.

f. The general morphology of the Hydrozoa colony, Coral Polyp, Sea-anemone and Physalia.

g. The relation between Hydra and other forms of the group.

h. The characteristics and the classes of Cœlenterata.

IV. The Starfish. *As an example of the Echinoderm, or radial type.*

A. Laboratory Work:

a. The regions of the body and their radial plan of arrangement.

b. The significance of the oral and aboral aspects.

c. The idea of *proximal* and *distal* as applied to the regions of the rays.

d. The general topography of the body and the designation of the rays with reference to *bivium* and *trivium*.

e. The external structures of the oral and aboral surfaces, with inferences concerning their functions.

f. The oral nerve-ring, radial nerves, and eye-spot.

g. The morphology of the internal organs and their arrangement.

h. The hard parts in the body wall and their calcareous nature.

i. Drawings of oral and aboral surfaces and of the anatomy.

Digitized by Google

B. Other Work:

a. A demonstration of the systems of organs in the Starfish.

b. The general morphology of the Sea-urchin, Sand-dollar, Synapta and Sea-cucumber.

c. Comparison of forms in this group.

d. Comparison of Echinodermata with lower groups.

e. The development of the Starfish.

f. The characteristics and the classes of Echinodermata.

V. The Earthworm. *As a simple form of the bi-lateral type animals.*

A. Laboratory Work:

a. The external morphology of the body with special emphasis upon its bi-laterally symmetrical condition, and its definite anterior and posterior regions.

b. The uniformly segmented body and absence of segmented appendages.

c. The internal anatomy with special attention to the segmental arrangement of the organs.

d. A study of the tissues from permanent preparations.

e. Drawings of external and internal anatomy.

B. Other Work:

a. The general anatomy and physiology of the Earthworm.

b. The general morphology and habits of the Tapeworm, Trichina, Pasteworm and Leech, with comparisons.

c. The strongly parasitic tendency of this group, and the degenerate condition of certain systems of organs in parasitic animals.

Digitized by Google

d. The life-history of the Tapeworm, or that of the Liver-fluke.

e. The relation of the Earthworm to the soil and its production.

f. The characteristics and the classes of Vermes.

VI. The Crayfish. *As a typical crustacean, with more or less distinctly marked body regions and segmented appendages.*

A. Laboratory Work:

a. The external morphology of the body, with special reference to the distinctly marked abdominal region and somewhat fused head and thorax.

b. The plan and structure of the exo-skeleton.

c. The morphology of the appendages and their structural variation in different regions of the body with inferences concerning their functions.

d. The sense organs, and the structure of the compound eyes.

e. The internal anatomy with reference to systems of organs.

f. Drawings of external and internal structures.

B. Other Work:

a. A general view of the morphology and physiology of the Crayfish.

b. The general morphology of the Lobster, Spider, Crab, Hermit Crab and Sow-bug.

c. A comparison of the forms of this group, with reference to structure and habits.

d. A comparison of the crustacean type with the types already studied.

e. The life-history of the Crayfish.

f. The biology of food.

Digitized by Google

g. The power in the Crustacea and lower groups to cast off mutilated parts and reproduce new ones.

h. The characteristics and the classes of Crustacea.

VII. The Grasshopper. *As an example of the insect type of animals.*

A. Laboratory Work:

a. The external morphology of the body and appendages.

b. The structure of the wings and their adaptation.

c. The internal anatomy and respiratory apparatus.

d. A comparison of specimens representing the different orders of insects.

e. Drawings.

B. Other Work:

a. The physiology and morphology of respiration and circulation in Insects.

b. The general characteristics of the Moth (or Butterfly), Beetle, Bee, etc., and Spider.

c. The habits of Insects and their injurious and beneficial relations to man.

d. Intelligence in Insects, and in the lower types of animals.

e. The relation of Insects to Plants.

f. The life-history and metamorphosis in Insects.

g. The characteristics and the classes of Insecta.

VIII. The Clam. *As an example of the Mollusk type.*

A. Laboratory Work:

a. The morphology of the shell including its structure and composition.

b. The external morphology of the Clam body and the relation of the latter to the shell.

c. The mechanism in the movement of the valves.

Digitized by Google

d. The anatomy of the Clam.

e. Drawings.

B. Other Work:

a. The general characteristics of the Oyster, Snail, Squid, Cuttlefish and Nautilus, with comparisons.

b. The significance of the absence of appendages and segmented body in the typical Mollusk.

c. The high degree of development of the heart in Mollusca.

d. The development of the Clam.

e. Oyster culture and other commercial interest in Mollusca.

f. The characteristics of Bryozoa and Ascidians.

g. The characteristics and the classes of Mollusca.

h. A comparative review of the organs of digestion in the groups of Invertebrates.

i. The same in regard to the organs of respiration and circulation.

j. The same in regard to the sense organs.

k. The same in regard to the hard parts, or exo-skeletons of the Invertebrate groups.

l. The same in regard to the muscular systems.

IX. The Perch. *As an example of the lower vertebrate or fish type.*

A. Laboratory Work:

a. The external morphology of the body with special reference to its symmetry and topography.

b. The morphology of the appendages; their relation and position.

c. A study of the endo-skeleton and exo-skeleton.

d. The anatomy of the Perch.

Digitized by Google

e. Studies of preparations of the representatives of the lower vertebrates.

f. Drawings.

B. Other Work:

a. The general characteristics of Amphyoxus and the Lamprey.

b. A comparison of the characteristics of the Elasmobranchs, Ganoids and Bony Fishes.

c. The development of the Perch from the ovum.

d. The systems of circulation and respiration in Fishes.

e. The characteristics and the classes of Pisces.

X. The Frog. *As an example of the Amphibian type.*

A. Laboratory Work:

a. The external morphology of the body.

b. The morphology of the limbs with special reference to their position, relation and homology.

c. The general anatomy.

d. A study of the principal tissues from permanent preparations.

e. The organs of special sense.

f. A study of the skeleton of a Frog.

g. Drawings.

B. Other Work:

a. The development and metamorphosis of the Frog.

b. The general morphology of Salamanders and Newts.

c. A comparison of the different forms of Amphibia with the typical stages in the development of the Frog.

d. The gradual transition of the Frog and Toad from aquatic to terrestrial habits.

Digitized by Google

e. A comparison of the Amphibia with the Fishes.

f. The relation and inter-dependence of organs in a higher animal.

g. The characteristics and the classes of Amphibia.

XI. *The Turtle. *As an example of the Reptilian type.*

A. Laboratory Work:

a. The external morphology, including the nature and structure of the shell, and the plates which compose it.

b. The structure of the head and beak.

c. The morphology of the limbs; the number of digits, etc.

d. The anatomy of internal organs.

e. The endo-skeleton.

f. The study of special preparations.

g. Drawings.

B. Other Work:

a. The general characteristics of the Snake and the Lizard.

b. Respiration and circulation in Reptilia.

c. A comparative study of the exo-skeleton and endo-skeleton in the Snake, Lizard and Turtle.

d The characteristics and classes of Reptilia.

XII. *The Pigeon. *As an example of the Bird type.*

A. Laboratory Work:

a. The external morphology with special attention to the structural modification of the anterior limbs for flight.

*Note.—It is not the plan to supply each pupil with a specimen of the Turtle, but to provide a series of preparations and so arrange the work as to enable several pupils to study a certain preparation at the same time. This plan also applies to the study of the Pigeon and Cat.

Digitized by Google

b. The structure of the exo-skeleton of feathers.
c. The internal anatomy with special attention to the digestive apparatus.
d. The highly developed organs of special sense.
e. A study of the skeleton of the Bird.
f. Drawings.

B. Other Work:

a. The general characteristics of the principal types of Birds.
b. The close resemblance between Birds and Reptiles.
c. The development of a Bird from the egg.
d. The characteristics and the classes of Aves.
e. The migration, habits and distribution of Birds.
f. The subject of variation and its causes. Examples from pigeons.
g. The theory of Natural Selection and the leading facts upon which it is based.

XIII. *The Cat. *As an example of the Mammalian type.*

A. Laboratory Work:

a. The external morphology.
b. The special structure of the limbs and digits.
c. The exo-skeleton of hair.
d. The teeth and their arrangement and specialization.
e. The internal anatomy.
f. The endo-skeleton and its special modifications.
g. A comparative study of special points in the skeleton of Vertebrates.
h. Drawings.

---

*See Note on page 69.

Digitized by Google

B. Other Work:

a. The characteristics of the various types of Mammals.

b. The development of teeth and the dental formulæ in Mammals.

c. Homology of the limbs in Vertebrates.

d. The circulation in Mammals and Birds.

e. The characteristics and the classes of Mammals.

f. Comparison of the organs of respiration, circulation, digestion and the nervous systems in the various groups of Vertebrates.

g. The affinity of the groups in the animal kingdom.

PLANT TYPES.

XIV. PROTOCOCCUS AND THE YEAST PLANT. *As examples of the simplest forms of unicellular plants or Protophyte.*

A. Laboratory Work:

a. The morphology of Protococcus and its mode of reproduction.

b. The morphology of the Yeast Plant and mode of reproduction.

c. A comparison of the morphology and physiology of Protococcus and the Yeast Plant.

d. Drawings.

B. Other Work:

a. The nature of a unicellular plant and its essential elements.

b. The functions of chlorophyl, starch, cellulose and sugar.

c. The characteristics of a true or typical plant; of a saprophyte; of a parasite.

Digitized by Google

d. The morphology and physiology of the Bacteria.

e. The characteristics and the classes of Protophyta.

XV. SPIROGYRA. *As an example of a unisexual plant or Zygophyte.*

A. Laboratory Work:

a. The morphology of the thallus and relation of the cells.

b. The use of reagent and tests for cellulose, protoplasm, starch and sugar.

c. The chlorophyl and its distribution.

d. A study of other forms of Algæ, including Diatoms, Desmids, Oscillaria, etc.

e. Reproduction in Spirogyra.

f. Drawings.

B. Other Work:

a. The characteristics of some of the forms of Zygophyta.

b. A comparison of the Protophyta and Zygophyta.

c. The characteristics and the classes of Zygophyta.

XVI. THE VAUCHERIA. *As an example of the egg-spore plants or Oöphyta.*

A. Laboratory Work:

a. The morphology of the thallus.

b. The morphology of the reproductive organs.

c. The general and gross anatomy of the Rock-weed, and the study of the fruiting thallus from preparations.

d. Drawings from Vaucheria and Rock-weed.

B. Other Work:

a. The life-history of Vaucheria.

b. The general morphology of Volvox, Water-moulds, and Mildew.

Digitized by Google

c. A comparison of the thalli in groups already studied.

d. A comparison of the reproduction in Protophyta, Zygophyta and Oöphyta.

e. The economic interest in the Fungi of this group.

f. The characteristics and classes of Oöphyta.

XVII. The Nitella. *As an example of the spore-fruit plants or Carpophyta.*

A. Laboratory Work:

a. The gross morphology of the plant-body.

b. The elements of stem, nodes, internodes and leaves.

c. The morphology of the reproductive organs.

d. The study of a mushroom or toadstool.

e. Drawings.

B. Other Work:

a. The nature of Wheat-rusts, Smuts, Black Knot, etc., and their migratory and parasitic habits, and the relation of host to parasite.

b. The life-history of Wheat-rusts.

c. The mode of vegetation and reproduction in the saprophytic fungi, including Puff-balls, Mushrooms, etc.

d. The peculiarity of Lichens.

e. Sexual and non-sexual reproduction in the Carpophyta.

f. The characteristics and the classes of Carpophyta.

XVIII. The Marchantia. *As an example of the moss-worts or Bryophyta.*

A. Laboratory Work:

a. The gross morphology of the plant body.

Digitized by Google

b. The general histology of the thallus and rhizoid, and primitive woody tissue.

c. The gemmæ cups and gemmæ.

d. The morphology of the reproductive organs.

e. A comparison of Marchantia with a Moss.

f. Drawings.

B. Other Work:

a. The life-history of Marchantia.

b. The principal characteristics of the Mosses.

c. A comparison of the Bryophyta with lower groups.

d. The characteristics and classes of Bryophyta.

XIX. The Equisetum. *As an example of the Fern-worts.*

A. Laboratory Work:

a. The gross morphology of the plant body, with special attention to the hollow, jointed stem, the roots and leaves.

b. A study of the reproductive organs.

c. The development of spores and prothallium.

d. Drawings.

B. Other Work:

a. The life-history of the Horsetails.

b. The significance of an alternation of generation of Oöphore and Sporophore.

c. The characteristics of the Horse-tails.

XX. The Pteris. *As an example of the Ferns.*

A. Laboratory Work:

a. The general morphology of the plant body, including rhizome, frond, and rhizoids.

b. General histology of the rhizome and stipe.

c. The structure of the sori, sporangia, and spores.

Digitized by Google

d. Germination of spores and development of prothallia.

e. Drawings.

B. Other Work:

a. The life-history of the Fern.

b. The characteristics of some types of Ferns.

c. The development of spores from plant-hairs with a comparison of this origin in lower forms.

d. The significance of apospory.

e. The characteristics of the Ferns.

XXI. *The Selaginella. *As an example of the Club-mosses.*

A. Laboratory Work:

a. The general morphology of the stem and leaves.

b. The morphology of the microspores and macrospores.

c. Drawings.

B. Other Work:

a. The general characteristics of the Club-mosses.

b. The characteristics and the classes of Pteridophyta.

c. A comparative review of the types of cryptogams, with special reference to the development of the roots, stems, leaves and plant hairs.

d. A comparative review of the cryptogamic types with reference to sexual reproduction.

XXII. The Pine. *As an example of the simpler form of Flowering Plants.*

A. Laboratory Work:

a. The general gross morphology of stem, roots and leaves.

*Note.—The laboratory work upon the Club-moss may be omitted and the allotted time added to the review of other Cryptogams.

Digitized by Google

b. The morphology of the reproductive organs, including the male and female flowers.

c. The germination of pollen grains and the study of the prothallia.

d. The fertilization of the ovules, and the development of the Pine seedling.

e. Drawings.

B. Other Work:

a. The life-history of the Pine.

b. The special characters of other orders of Gymnosperms.

c. The characteristics and orders of the class Gymnosperms.

XXIII. The Trillium. *As an example of the higher Flowering Plants of the monocotyledonous type.*

A. Laboratory Work:

a. The general, gross morphology of the stem, leaves and roots.

b. The morphology of the flower and its numerical plan.

c. The essential reproductive organs.

d. The minuter structure of the stem and leaves.

e. Drawings.

B. Other Work:

a. The life-history of Trillium.

b. The principal types of the monocotyledons.

c. A comparison of Trillium, "Wandering Jew," "Jack-in-the-Pulpit," Grass, Sedge and Orchid.

d. The characteristics and orders of the monocotyledonous plants, or Endogens.

Digitized by Google

XXIV. The Phlox. *As an example of a more complex flowering plant of the dicotyledonous type.*

A. Laboratory Work:

a. The general, gross morphology of the stem, leaves and roots.

b. The morphology of the flower and inflorescence.

c. The study of the organs of reproduction and their development.

d. A study of trichomes in Phlox and other plants.

e. A study of the principal tissues in Phlox.

f. Drawings.

B. Other Work:

a. The special characters of the principal types of Exogens.

b. A comparison of Exogens and Endogens.

c. A comparison of Phenerogams and Angiosperms.

d. The characteristics and principal orders of Exogens.

SUPPLEMENTARY WORK.

A. Miscellaneous Laboratory and Field Work.

The work specified under this heading may be omitted until the study of Types has been completed; but much of it can conveniently be done in connection with the study of Types.

a. Germination of the seed of the Maize, Bean, Buckwheat and Maple.

b. The morphology of the Seedling.

c. The examination of special forms of Stems.

d. The examination of special forms of Roots.

e. The examination of special forms of Leaves.

Digitized by Google

f. One or more representatives of the following named families should be examined, more or less carefully as time may permit:

(1) Crowfoot,	(6) Nightshade,	(11) Sedge,
(2) Lily,	(7) Honeysuckle,	(12) Grass,
(3) Violet,	(8) Mint,	(13) Maple,
(4) Spiderwort,	(9) Willow,	(14) Hickory,
(5) Arum,	(10) Oak,	(15) Rose.

Learn the use of the "Key" in determining the species of some of the simpler representatives of the above named families.

B. Other Work:

a. The nature and function of the members of the plant body, and the process of transforming energy in the plant.

b. The plan of classification in an artificial system. In a natural system.

c. Nature and morphology of the "botanical fruit," and the miscellaneous nature of "edible fruit."

d. Fertilization in the Angiosperms.

e. A summary of the principal distinguishing characteristics of the above named families.

f. A review of the year's work with a summary of the characteristics of Animal life and Plant life.

LABORATORY EQUIPMENT.

All necessary laboratory equipment is provided by the Board of Education, excepting that each pupil is required to supply himself with the following named articles:

A case of laboratory tools containing

1 pair of scissors.

1 pair of forceps.

Digitized by Google

1 scalpel.
1 blow-pipe.
1 pair of needles with handles.
1 hand magnifier. Price of set about $1.15.

*A set of laboratory tablets consisting of
1 drawing tablet.
1 writing tablet.
1 pair of covers.
1 set of fasteners. Price of set, 55 cents.
1 hard pencil (HHHH A. W. Faber). Price, 5 cents.

SPECIAL BOOKS OF REFERENCE.

The following books are authorized by the Board of Education, as desk copies and works of reference. These books together embrace the essentials of the various topics introduced in connection with the laboratory work in this Syllabus, and are recommended to the teachers:

(1) Parker's Elementary Biology. Macmillan & Co.
(2) Gibson's Elementary Biology. Longmans, Green & Co.
(3) Huxley & Martin's Practical Biology. Macmillan & Co.
(4) Campbell's Elementary Biology. Swan, Sonnenshein & Co.
(5) Sedgewich and Wilson's General Biology. Henry Holt & Co.
(6) Claus' Text-book of Zoology (2 vols.) Macmillan & Co.

* The Laboratory Tablets published by Donahue & Henneberry are authorized by the Board of Education.

Digitized by Google

(7) Martin's Human Body. Henry Holt & Co.

(8) Bessey's Elements and the High School Botany. Henry Holt & Co.

(9) Arthur, Barnes & Coulter's Plant Dissection. Henry Holt & Co.

(10) Bower & Vines' Practical Botany.

(11) Stormouth's Manual of Scientific Terms. Maclachlan & Stewart.

(12) Whitman's Methods of Microscopic Investigations. Casino & Co.

Digitized by Google

PHYSICS.

Digitized by Google

Digitized by Google

SYLLABUS OF INSTRUCTION IN PHYSICS.

Second year—four hours per week—forty weeks.

INTRODUCTION.

This subject offers the pupil many sources of culture and discipline. He is surrounded by a world of phenomena. Accurately to observe these phenomena, and to describe adequately and concisely what is observed; to learn to trace the relation between cause and effect, and to appreciate that there is no causeless phenomenon; in brief, to form the habit of observing, thinking and expressing his thought—these are some of the most important ends to be attained. At the same time the pupil is acquiring habits of continuity of thought, he must also acquire a fundamental knowledge of the subject matter of the science.

It follows naturally from the foregoing aims, that the method of instruction must be mainly inductive. Each pupil is expected to perform in the laboratory, under the supervision and guidance of the teacher, the subjoined list of experiments. He shall work independently when practicable, keep a careful record of the experiments, and in quantitive work be held responsible for as high a degree of accuracy as the nature of the apparatus and the amount of time at his disposal will admit. The teacher shall exercise care in examining all the written work of the pupils and the record of their results in laboratory work so as to know that their observations and inferences are accurate.

Digitized by Google

In class recitations, aside from discussions and elucidations of the laboratory experiments, the teacher will give such additional experiments, exercises and demonstrations, and make such use of the text book as shall leave each topic as complete as the time will allow. Here is scope for the largest individuality of the teacher.

The following outline thoroughly taught, and the experiments given, accurately performed and carefully recorded, will enable a pupil to acquire sufficient proficiency in this study to admit him to the best American colleges.

Beginning with Magnetism, the work should be completed through Mechanics during the first ten weeks—through Pneumatics by the close of the first term. Six weeks will be given to Heat, eight weeks to Electricity, four weeks to Sound and six weeks to Light.

The following is a list of experiments for laboratory work, together with some of the more important additional topics for class-room work. The articles which are numbered relate to laboratory work, the others to class-room work.

I.—MAGNETISM.

Introduce the idea of force.

1. Effect of magnet on soft iron, on steel by contact.
2. Same by induction.
3. Notice poles by means of tacks or iron filings.
4. Magnetic screens.
5. Position of a free magnet.
6. Magnetoscope and use.
7. Laws of magnets.

Digitized by Google

8. Effect of breaking a magnet.
9. Law of magnetization.
10. Reversal of polarity.
11. Induced poles.
12. Map the magnetic field.

II.—MEASURING.

1. Measure lengths and plane surfaces.
2. Measure volume of sphere, cylinder, rectangular prisms and capacity of a tumbler.
3. Measure with micrometer calipers, thickness of wire, paper, etc.
4. Weigh 25 C.C. of water.

III.—PROPERTIES OF MATTER.

1. Impenetrability.
2. Porosity—mix alcohol and water, sugar and water.
3. Ductility—of glass.
4. Inertia.
5. Elasticity—compression of air.
   stretching—wire, rubber.
   bending—wood.
   torsion—wood.
6. Tenacity—of wires.
7. Cohesion—of fresh surfaces of lead, rubber or paraffine, of a drop of mercury, or of water on a dusty surface.
8. Adhesion—disc to water.
9. Capillarity—tubes and plates in cold water, in hot water, in other liquids.

Digitized by Google

Three conditions of matter, solid, liquid, gas.
Fluidity and semi-fluidity as shown in malleability, ductility, vicosity and pliability.
Kinetic theory of gases.

IV.—PENDULUMS.

1. Derive Laws.

Compound pendulums.
Center of oscillation and percussion.
Compensation pendulum, compensation balance wheel.

V.—MECHANICS.

1. Composition of parallel forces in the same plane.
2. Levers.
3. Wheel and Axle.
4. Pulleys.
5. Inclined plane.

Work in each to be calculated.

6. Friction.
7. Find center of gravity. Determine the influence of weight of the lever.
8. Composition of angular forces.
9. Determine the laws of falling bodies.

Force, Energy, potential and kinetic, Work, Power, Wedge, Screw, Gravitation, Stability, Newton's Laws.
Constant forces and their applications in ascending bodies and projectiles.

VI.—HYDROSTATICS.

1. Pressure in water.
2. Archimedes' Principle.

Digitized by Google

Hydrostatic Press or Bellows.
Other machines in which same power is used.
Pascal's vases.

VII.—SPECIFIC GRAVITY.

1. Measure and weigh a rectangular block of wood and compare with equal volume of water.
2. Find volume of an irregular solid by displacement.
3. Specific Gravity of a sinking solid, a floating solid, a liquid with Specific Gravity, bottle, with hydrometer and by balanced columns.

VIII.—PNEUMATICS.

1. Specific Gravity of Air. Degree of exhaustion.
2. Pressure of Air—Barometer.
3. Pumps—Lifting—Force.
4. Siphon.
5. Relation of Volume, Density and Tension to Pressure, as shown by Mariotte's Tube.

Use and construction of air-pump and various experiments with same.

Second Term.

(One and one-half months.)

IX.—HEAT.

1. Sources of heat.
2. Expansion of a gas, a liquid, a solid. Co-efficient of expansion.
3. Diffusion of heat.
4. Test boiling point and freezing point of thermometer.
5. Effect of pressure on boiling point.

Digitized by Google

6. Find boiling points of various liquids.
7. Cooling processes—solution—evaporation.
8. Dew point.
9. Law of cooling.
10. Latent heat of water.
11. Latent heat of steam.
12. Specific heat of shot.

Doctrine of the "Correlation of Energy."
Theory of Heat.
Irregular expansion of water.
Change of volume in solidification.
Distillation.
Absolute Zero.
Radiation, Diathermancy, Athermancy.
Mechanical Equivalent of Heat. Heat equivalent of chemical combination.
Steam Engine.

Electricity.

(Two months.)

X.—Frictional Electricity.

1. Develop it on glass, rubber, etc.
2. Show kinds—by electroscope.
3. Electrify by Induction. Experiment with egg shells covered with tin foil.
4. Condensers.

Electrophorus.
Experiments with Holtz or plate machine.
Atmospheric Electricity.

XI.—Current Electricity.

1. Phenomena of a Simple Cell.
2. Action of current on magnetic needle—Ampere's

Digitized by Google

Law—Notice magnetic property of a wire carrying a current.

3. Classify conductors and insulators.
4. Set up and study a two-fluid cell.
5. Helices and electro-magnets.
6. Heating effect of a current.
7. Chemical effect of a current.
8. Laws of Resistance—by balancing—by Wheatstone Bridge.
9. Resistance of cells.
10. Induced Currents.

Source of energy of the Voltaic cell.

Ohm, Volt, Ampere, Coulomb, Watt, Telephone, Telegraph, Electric Bell, Electric Light, Dynamo, Electric Motor, Electro-plating.

Thermo-electricity.

Ampere's Theory of Magnetism.

XII.—SOUND.

(One month.)

1. Study waves in rubber cord.
2. Show that a sounding body is vibrating.
3. Find wave length and velocity by hydrometer jar and tuning fork experiment, noticing interference and re-enforcement.
4. Velocity of Sound in open air.
5. Cause of pitch.
6. Determine velocity of Sound in brass rod.
7. Laws of vibrating strings, noticing beats, sympathetic vibrations and harmonics.
8. Interference.

Digitized by Google

Medium of transmission.
Variation of loudness.
Effect of temperature and density of velocity.
Difference between noise and music.
Pitch numbers of notes of the scale.
Quality.
Musical instruments.

XIII.—LIGHT.

(One and one-half months.)

1. Shadows.
2. Law of intensity.
3. Images through apertures.
4. Reflection—angle of.
5. Images—virtual—from plane mirrors.
6. Find focal length of concave mirror—Images.
7. Refraction by water.
8. Lenses—focal length—images—applications.
9. Photometry.

Undulatory Theory. Classes of spectra—Mixing colors—Polarization.

Digitized by Google

CHEMISTRY.

Digitized by Google

Digitized by Google

INTRODUCTION.

In the teaching of Chemistry, the laboratory, not the lecture room, will be the rendezvous of the pupils.

The laboratory manual will be always at hand; reference books, few but excellent, will be constantly consulted, while the text book proper should be considered of the least possible value in the acquirement of a practical, intelligent knowledge of this very attractive study. The syllabus that follows is prepared for the purpose of securing uniformity in both method and matter in the teaching of Chemistry in the Chicago High Schools. Let it be distinctly understood that it is not the duty of the teacher to impart chemical facts, nor to instruct in the manipulation of apparatus, but to lead the pupil to draw proper conclusions from chemical phenomena. This thought always present will render the teacher's work the most efficient and the pupil's progress the most desirable. Few pupils will pursue this study with the chemist's profession in view, therefore the chemical facts obtained may gradually fade from the memory, but the power gained by careful training in correct reasoning upon the phenomena observed, will remain a permanent possession.

In making this the highest aim of the study, no pupil will be the poorer chemist, for the correct sequence of topics, the important facts of the science, as well as the best training in observation and manipulation are essential to correct reasoning.

Digitized by Google

The work is presented in three vertical columns, showing so far as possible the order of study and the relative amounts of time to be devoted to each topic. The three kinds of work should be kept in the order given, viz.:

First, The Laboratory work. Secondly, The Text-book. Thirdly, The Lecture.

No definite time limits are fixed except by terms. This will permit sufficient latitude in daily work and yet bring pupils to the same point at the end of each term.

In the column marked "lectures" are given some topics upon which it would be well to give a formal talk or class demonstration. Most of this work may be assigned as text-book work, if it seems more desirable. Usually the demonstration of some difficult experiment by one more skilled in chemical manipulation, or an occasional resumé of practical chemical discoveries, will awaken new interest, and add to the pupil's zest in the pursuit of the study.

In this, as well as in every study, the use of good English should be constantly enforced, and the language used in the result of each experiment and class demonstration should be carefully noted by the teacher. The note books may not present the same neatness if the writing is done in the laboratory, but the work will usually be of more value. The inspection of these note books should be so rigid as to require a revision of all incorrect work, and in necessary cases the re-performance of the experiments.

In the Spring Term there is of necessity a lack of parallelism in the laboratory and class room work.

Digitized by Google

There are but few experiments in organic chemistry that can be performed with profit by the pupil. While the text-book and lecture cover this ground, the pupil should devote himself to the analysis of unknown compounds.

The work here outlined is intended to occupy the class four days a week, for one year, spending two days a week in the laboratory and two in the class room.

A—NATURE OF THE SUBJECT.

Laboratory Manual.	*Text-Book.*	*Lectures.*
Physical Changes (Experiments 4 and 7).		
Chemical Changes (Exp. 8).		
		Chemical Changes See Manual, Exp. 9.
	Define — Experiment, Mechanical Mixture, Chemical Reaction, Chemism, Matter, etc. See Shepard, Sections 7, 10, 11, 12, 13, 14, 15 and 16.	
Solution. Exps. 10 and 11.		
Crystallization. Exp. 12.		
Allotropism. Exp. 15.		
		Elements and Compounds. Manual. Exps. 20 and 21.

B—GENERAL CHEMISTRY.

Laboratory Manual.	*Text-Book.*	*Lectures.*
Solution assists Chemical Changes. Exp. 16.		
Divisibility of Matter. Exp. 17.		
Porosity of Matter. Exp. 18.		
Atoms and Molecules. Exp. 19.		

Digitized by Google

Laboratory Manual.	*Text-Book.*	*Lectures.*
		The Atomic Theory.
	Atomic Theory. See Sections 20, 21, 22, 23 and 24.	
Analysis and Synthesis. Exps. 22 and 23.		
Acids and Alkalies. Exp. 24.		
	Acids, Bases, Salts. Sections 80 and 81.	
Neutralization. Exp. 25.		
Indestructibility of Matter. Exps. 26 and 27.		
Laws of Definite Proportion. Exp. 28.		
Laws of Multiple Proportion. Exp. 29.		
	Definite and Multiple Proportion. Sections 17 and 18.	
		Chemistry of Water. Manual. Exps. 30 and 31.
	Water. See Shepard, sections 38, 39, 40, 41 and 43.	
Water of Crystallization. Exp. 32.		
Efflorescence and Deliquescence. Exp. 33.		
Hydrogen. Exp. 36 and 37.		
		Hydrogen. Manual Exp. 38.
		Synthesis of Water. Exp. 39.
	Atomic Weights and Valency. Sections 19, 21 and 22.	
	Molecules, Formulas, etc. Chapter X.	
		Oxygen. Manual, Exps. 50, 51, 52 and 53.
	Oxygen. Sections 26, 27, 28, and review Exps. 22 and 23 Laboratory Manual.	

Digitized by Google

Laboratory Manual.	*Text-Book.*	*Lectures.*
Chemistry of Air. Exps. 40, 41 and 42.		
	The Atmosphere. Sections 82, 83, 84, 85, 86, 87 and 89.	
Nitrogen. Exps. 43, 44 and 45.		
		Nitrogen. Manual, Exp. 46 and 47.
	Nitrogen. Sections 47, 48, 49 and 50.	
Moisture in Air. Exp. 48.		
Carbon-dioxide. Exp. 49.		
	Ozone. Sections 30, 31, 32 and 33.	
Nitrogen and Oxygen. Exp. 54, 55, 56 and 57.		
	Compounds of Nitrogen and Oxygen. Sections 56 to 67.	
Compounds of Nitrogen and Hydrogen. Exp. 58 and 59.		
	Compounds of Nitrogen and Hydrogen. Sections 51 to 56.	
Chlorine. Exps. 60, 61 and 62.		
	Chlorine. Sec's. 90, 91, 92 and 93.	
Bromine. Exp. 63. Iodine. Exp. 64.		
	Bromine and Iodine. Secs. 112 to 116 and 122 to 126.	

Digitized by Google

WINTER TERM.

Laboratory Manual.	*Text-Book.*	*Lectures.*
Hydrochloric Acid. Exps. 65 and 66.		
		Nitric Acid. Manual Exp. 67.
	Hydrochloric and Nitric Acids. Secs. 73 to 77 and 94 and 96.	
Sulphuric Acid. Exp. 68 and 71.		
Hydro-sulphuric Acid. Exp. 69.		
Hydro-carbonic Acid. Exp. 70.		
		Sulphuric Acid.
	Sulphur and Oxygen. Secs. 171 to 177.	
	Sulphuric Acid. Secs. 180 to 184.	
	Hydro-sulphuric Acid. Secs. 165 to 170.	
	Hydro-carbonic Acid. Secs. 147 to 153.	
Phosphorus. Exp. 72.		
	Sulphur. Secs. 161 to 165.	
	Phosphorus. Secs. 213 to 219.	
	Silicon and Boron. Secs. 199 to 212.	
Carbon-dioxide. Exps. 75 and 76.		
Absorption of Carbon-dioxide. Exps. 77 and 78.		
	Carbon and Oxygen. Secs. 146 to 153.	
	Carbon. Secs. 136 to 140.	
Candle Flame. Exps. 79 to 82.		
Bunson Burner. Exps. 82 and 83.		

Digitized by Google

Laboratory Manual,	*Text-Book.*	*Lectures.*
Action of hot Carbon upon Oxygen in Combustion. Exp. 84.		
The Blow-pipe. Exps. 85 and 86.		
The Borax-bead. Exp. 87.		
Marsh Gas. Exp. 88.		
Illuminating Gas. Exp. 89.		
		Illuminating Gas, Water Gas.
	Carbon and Hydrogen. Secs. 140 to 146.	
	Candle Flame. Secs. 27 and 28.	
	Oxydizing and Reducing Flames. Secs. 29 and 30.	
		Combustion.

C—METALS.

Laboratory Manual.	*Text-Book.*	*Lectures.*
Sulphides. Exp. 100.		
Chlorides and Carbonates. Exps. 101 and 102.		
	Properties of Metals, Salts, Classification of Metals, etc. Secs. 228 to 234.	
		The Reduction of Metals.
Blow-pipe Tests. Exps. 104 to 107.		
First Group Metals. Exps. 107 to 112.		
	First Group Metals. Secs. 235 to 247.	
		Silver-plating and Silver-printing. Manual, Exps. 114 and 115.
Second Group Metals. Exps. 73, 74 and 119 to 129.		

UofM
Digitized by Google

Laboratory Manual.	*Text-Book.*	*Lectures.*
	Second Group Metals, Division A, Arsenic, Antimony and Tin. Secs. 251 to 263.	
	Second Group Metals, Division B, Bismuth, Copper and Cadmium. Secs. 264 to 277. Gold and Platinum. Secs. 281 and 282.	
		Mining Engineering.
Third Group Metals. Exps. 130 to 151.		
	Third Group Metals, Iron and Aluminum. Secs. 291 to 303. Nickel, Cobalt, Manganese and Zinc, 304 to 322.	
		Manufacture of Salts.
Fourth Group Metals. Exps. 155 to 160.		
	Fourth Group Metals. Secs. 339 to 355.	
Fifth Group Metals. Exps. 159 to 165.		
	Fifth Group Metals. Secs. 357 to 367.	

SPRING TERM.

D—ORGANIC CHEMISTRY.

Laboratory Manual.	*Text-Book.*	*Lectures.*
	Introduction to Organic Chemistry. Secs. 200 to 204.	
Fermentation, □ Exps. 90 and 91.		
Distillation. Exp. 92.		
	Alcohol, Vinegar and Soap. Exps. 224 to 230.	
	Organic Acids. Secs. 231 to 241.	
	Carbohydrates. Secs. 242 to 250.	

Digitized by Google

Laboratory Manual.	*Text-Book.*	*Lectures.*
Sugar. Exp. 93.		
	Alkaloids. Secs. 260 and 261.	
		Digestive Ferments. Manual Exps. 94 to 100.
		The Manufacture of Sugar.

E—UNKNOWN SUBSTANCES.

Manual.	*Text-Book.*	*Lectures.*
Remainder of the year to be spent upon the Analysis of Unknown Substances.		

Digitized by Google

Digitized by Google

GEOLOGY.

Digitized by Google

Digitized by Google

GEOLOGY SYLLABUS.

Laboratory and text-book methods will be properly combined in the study of Geology. The observing faculties will be called into exercise, and pupils will become trained in weighing evidence and discovering causes where the absolute certainty of mathematical demonstration is impossible. Interest will also be created in noting the connection between geological investigation and the world's industries.

Text-book in use—LeConte's Compend of Geology.
Time—twenty weeks—four recitations per week.

Work of First Month.

Topics of the book, to Reefs and Keys of Florida.

On the threshold of the study let the "Nebular Hypothesis," as shown by the evolution of the Solar System, be presented with questions, and assigned as a topic for a written exercise.

About ten minutes of each recitation will be devoted to work outlined in the Syllabus, but not given in the text-book.

Time will be given to the practical study of minerals from specimens.

Tests Used:

Physical properties, acid reactions, shape of larger crystals.

Digitized by Google

Order of Study:

Silica, Silicates, Lime, Ores, Alumina, Carbon, other minerals. Ample time will be given to all the pupils to become familiar with the specimens introduced. Encourage the collection, description and naming of new specimens, and their addition to the cabinet.

*Second Month.**

Dynamical Geology, completed. Structural Geology to Igneous Rocks. Mineralogy continued. Structure of rock studied from specimens as in the Mineralogy. Out-door work.

In Chicago:

Erosion, deposit and sorting along lake shore. Collections for the cabinet. Trace former shore lines and compare with present. Peaty deposits. Comparisons of Soils.

Stony Island—Its glacial phenomena, dip, strike, axis, rock material, fossils. Outcrops at Pacific Junction, Bridgeport, and Western Avenue near Chicago Avenue.

South-west of Chicago:

Lemont to Joliet presents a fine field for study of erosion, glacial action, dip, strike, cleavage, lamination, joints, conformity and fossils. Sand dunes south-east of Chicago deserve attention.

Third Month.

Structural Geology and Historical Geology to Devonian System.

---

*Sec. 4 of Chap. 3 Geographical Distribution of Species, may be omitted (if the work is more than the class can accomplish), at the discretion of the school.

Digitized by Google

Written discussions of some locality familiar to the writer are to be presented and read by different pupils and commented upon in class recitation. Blackboard drawings of sections and surface maps of portions of the United States. Study of specimens illustrating structural geology continued.

A review of the animal and vegetable kingdoms in their branches, classes, and in the more important divisions, their orders. Study of fossils commenced. Specimens will be placed in the hands of the pupils, with the purpose of securing such conclusions as will show an appreciation of the practical and beneficial results of geological study. To what branch, class, order and age does each belong? In certain cases determine genera and species.

Fourth month.

*Historical Geology to Quaternary Period:**

Study of fossils continued as before. Brachiopods and Cephalopods furnish most useful material. Attention given to the evolution of new types of life. Relations will be more readily seen by observing progress from ancient forms in two or more directions, than by comparing living forms. Fish, Birds, Reptiles and the Horse family furnish excellent examples.

Industrial Geology:

Artesian wells, building stones as found in the quarry, soils, health as related to drainage, coals, petroleum and gas, the metals as they occur in the rocks, the use of clays, sand beds, and various rock material in arts and manufactures.

*European Geology may be omitted.

Digitized by Google

Let the English equivalents of all Greek words used throughout the entire study be carefully vocabularized, thoroughly studied and applied.

Fifth Month.

Book completed with general reviews. Reviews of the progress of life are important. Classes in their progress and changes traced down to the present. Reviews tracing growth of our continent. Discuss theories of glacial cold. Present more evidence concerning the antiquity of man. Industrial Geology continued.

HELPS AND REFERENCES.

For Pupils:

A cabinet as complete as possible. Crosby's Tables for the Determination of Common Minerals. Geological Reports, especially the plates, and Dana's Geology, for determining fossils. Hitchcock's Latest Geological Map.

For Teachers:

LeConte's Elements of Geology. Geike's Geology. Croll's Climate and Time. Nicholson's Paleontology. Mill's Realm of Nature.

SUGGESTED PLAN OF CABINET.

First Division—Mineralogy:

Silica and Alumina.
Silicates.
Lime Compounds.
Barytes, Soda, Carbon, Manganese, etc.
Metals and Ores.

Digitized by Google

Second Division—Dynamical and Structural Geology:

Showing effect of Atmospheric and Aqueous agencies.

Showing effect of Organic and Igneous agencies.

Stratified forms.

Metamorphic and Igneous forms.

Veins, Laminæ, Crumpling, etc.

Third Division—Epochs Illustrated:

Archæan, Silurian.

Devonian, Carboniferous.

Mesozoic, Cenozoic.

Fourth Division:

Mollusks and Brachiopods of Silurian.

Other branches of Silurian.

Devonian and Carboniferous fossils.

Mesozoic and Cenozoic fossils.

Fifth Division—Industrial Geology:

Soils and Mineral Fuels.

Building Stones.

Potter's, fire and brick clays with their products.

Iron and Iron Ores.

Metals and Ores other than iron.

Material used in chemical manufactures.

Material used for Physical Application in the Arts.

Digitized by Google

Digitized by Google

ASTRONOMY.

Digitized by Google

Digitized by Google

ASTRONOMY SYLLABUS.

Text-book—Ray's New Astronomy.
Time—twenty weeks—four recitations per week.

Work of First Month.

The first seven chapters of text book.

It will be useful in beginning this study to give a lecture tending to arouse interest in the subject by giving some idea of the work to be done and the benefits to be derived.

About ten minutes of each recitation will be given to matter not specifically included in the text-book topics.

Globes explained. Practical problems involving use of globes. Charts explained by pupils. Blackboard drawings by pupils. Drawings of the virtual images made by convex and concave lenses, of those made by convex and concave mirrors. Problems in longitude by telegraph, by chronometer. Problems in latitude by observation of a star of known declination.

Second Month.

Text-book, chapters eight to eleven, inclusive. Drawings by pupils to illustrate topics continued. Use of globes and charts and solution of problems continued. Attention given to mathematics of geometrical demonstrations. Observation of the planets from night to night. Study of stars and

Digitized by Google

constellations will be continued during the course. Make this study as interesting and practical as possible. Recall myths relating to the stars and constellations. First locate the Dipper and Pole Star, then Belt of Orion with Betelgeux and Rigel, then in the following order, Sirius, Aldebaran, Pleiades, Procyon, Castor, Pollux, Regulus, Capella, Deneb, Arcturus, Algol, Vega, Spica. Sun's distance by velocity of light.

Third Month.

Text-book, chapters twelve to fifteen inclusive. Drawings, use of globes, study of constellations. Mastery of the subject constantly tested by problems. Cause of tide on side of earth opposite to moon.

Fourth Month.

Text-book, chapters sixteen to twenty-one, inclusive. Arrangements may possibly be made for a class to visit Dearborn Observatory. Views of Moon, a Planet, a Nebular, a Star. The mounting of the equatorial and the transit. Telegraphic record of observations. Celestial measurements traced to the base line. Problems. Location of stars. Nebular Hypothesis applied and tested.

Fifth Month.

Book completed and reviewed. Motion shown by displacement of spectroscopic lines. Late results of photography and spectroscopic observation.

HELPS AND REFERENCES.

For Pupils:

Celestial and Terrestrial Globes. Astronomical Charts. Photographs of nebulæ and astronomi-

Digitized by Google

cal phenomena. Ball's story of the Heavens. Ball's Time and Tide.

For Teachers:

Young's General Astronomy. Young's The Sun. Thornton's Advanced Physiography. Langly's The New Astronomy. Airy's Gravitation. Clerk's History of Astronomy during the 19th Century.

Digitized by Google

Digitized by Google

Department of Rhetoric and Literature.

Digitized by Google

Digitized by Google

INTRODUCTION TO COURSE OF STUDY IN ENGLISH.

The course of study in English comprises three features: First, the reading, outside of school, of at least ten books each year, representing history, fiction, science, travel, poetry, etc., selected from an authorized list; secondly, the writing of at least five careful essays upon subjects connected with this reading, which are to be subjected to the criticism of the teacher; thirdly, the class-room study of formal rhetoric with exercises for illustration, the critical study of foreign and English classics, and the history of literature, as presented in the following syllabus. The aim of the whole course is to inspire the pupil with a love for good literature, to cultivate the taste which will enable him to judge of what is excellent in writing, and to give him, if possible, the power to express his thoughts in concise, classical English.

The first year is mainly devoted to the study of Rhetoric, with the design of making its most important general principles help directly toward clearer and more vivid expression, and enabling the pupil to recognize, in some degree, such principles in the works read and studied by him. The mere definition and classification of the common faults into which the novice falls should give place in importance to constructive work, the cultivation of fluency through the writing of frequent

Digitized by Google

exercises, entered upon with enthusiasm, and such criticism and correction by the teacher as shall best lead to accuracy. The class-room reading of the second year is mainly illustrative of myth and legend. Besides introducing the reader to world famed works of literature, and preparing for the study of history, it gives acquaintance with the realm from which poet and prose writers are constantly drawing illustrations. Without some such introduction the would-be student of our best English is chained to his classical dictionary and misses much of the beauty and meaning of his author. The third and fourth years are given principally to a survey of English literature in chronological order.

While Shaw's History of English Literature is used as a hand-book, the emphasis is to be placed upon the actual study and discussion by the class of some great representative masterpieces of literature. Such study and discussion will enable the pupil in some degree to think the thought and feel the feeling of the great author he has in hand, and will be of incalculable value in developing a love for what is noble, and making clear the essential unloveliness of low thoughts and aims. To learn to love good books by coming into actual acquaintance with them and being made to feel their beauty is, from the intellectual standpoint, an invaluable training of the judgment and taste; and from the moral standpoint, it means growth into a preference for high thoughts and pure feelings, a choice of the noblest and most helpful human companionship.

Digitized by Google

FIRST YEAR.

FIRST TERM.

Rhetoric:

First 122 pages. Also Lesson 78. Punctuation, Sentence Structure, Paragraphing, Letter Writing, with illustrations.

*Required Reading:**

Hawthorne's Tales of the White Hills.

Optional:

Burroughs' Roof Tree; Addison's Spectator Papers (The Fan Exercise, The Vision of Mirza, The Vision of Calamities, two parts; Pugg, The Monkey); Lamb's Essays of Elia (Old China, Dream Children, The Old and the New Schoolmaster, Popular Fallacies); Irving's Sketch Book (Westminster Abbey, Rural Life in England, Stratford-on-Avon, Legend of Sleepy Hollow).

SECOND TERM.

Rhetoric:

Pages 122–222, 263–293. Imagery, Energy, Wit, Pathos, Elegance, Kinds of Poetry, Metre and Scansion, with illustrations.

Required Reading:

Five Poems of Bryant (The Conqueror's Grave, Robert of Lincoln, To a Waterfowl, The Blue Fringed Gentian, Wind and Stream); Holmes' Chambered Nautilus.

---

*NOTE.—In each term the required reading is finished before other work of the same kind is undertaken. If time remains, selections are to be made from the optional list.

Digitized by Google

Optional:

Selections from first term optional list; Scott's Lady of the Lake; Goldsmith's Deserted Village; Browning's Pied Piper; Lowell's My Garden Acquaintance; The Old Manse (introduction to Hawthorne's Mosses from an Old Manse); Webster's First Bunker Hill Oration; Lincoln's Gettysburg Address and Second Inaugural; Washington's Farewell Address and Rules of Conduct.

Teachers will make such use as may seem to them good of the parts of the Rhetoric text-book not specifically noted in this syllabus.

THIRD TERM.

Shakespeare's Merchant of Venice or Midsummer Night's Dream.

SECOND YEAR.

FIRST TERM.

Required:

Berens' Mythology (to be used as a hand-book throughout the year); Selections from the Iliad, or, Selections from the Odyssey; Alcestis or Antigone.

Optional:

Morris' Life and Death of Jason (abridged); "Æschylus" and "Sophocles" in the series of "Ancient Classics for English Readers" (to be read by pupils outside, with class comment by the teacher); Plato's Apologia and Phædo.

SECOND TERM.

Required:

Macaulay's Lays of Ancient Rome; The Æneid, Books I. and VI.; Shakespeare's Julius Cæsar.

Digitized by Google

Optional:

The Nibelungenlied.

THIRD TERM.

Required:

Lowell's Vision of Sir Launfal.

Optional:

Tennyson's Holy Grail and Sir Galahad.

THIRD YEAR.

Shaw's History of English Literature as hand-book throughout the year.

FIRST TERM.

Required:

Tennyson's The Coming of Arthur, Elaine, Guinevere, The Passing of Arthur; (Guinevere to be read in class, the others outside, with class comment by teacher); Early English History and Development of the English Language; Chaucer's Prologue.

Optional:

Chaucer's Knight's Tale. Selected English Ballads.

SECOND TERM.

Required:

Shakespeare's Macbeth, or, As You Like It.

Optional:

Spencer's Faerie Queen, first canto; Bacon's Essays; Milton's L'Allegro and Il Penseroso.

THIRD TERM.

Required:

Paradise Lost, Book I.

Optional:

Dryden's Alexander's Feast.

Digitized by Google

FOURTH YEAR.

Shaw's History of English Literature as hand-book throughout the year.

FIRST TERM.

Required:

Shakespeare's Hamlet; Review of the Elizabethan and study of the Queen Anne Period; Macaulay's Essay on Johnson; Selected Poems of Robert Burns.

Optional:

Pope's Rape of the Lock or Essay on Man; Addison's Sir Roger de Coverley Papers; Gray's Bard and Elegy in a Country Churchyard.

SECOND TERM.

Required:

Selected Poems of Wordsworth; Selections from Carlyle's Heroes and Hero Worship, Emerson's Behavior and Culture, or Social Aims.

Optional:

Discussion in class of some novel in fourth year reading course; Keat's Eve of St. Agnes; Selected Poems of Shelley; Coleridge's Ancient Mariner; Selections from Books III. and IV. of Byron's Childe Harold; Scudder's Introduction to Ruskin, or, Ruskin's Sesame and Lilies.

THIRD TERM.

Required:

Browning's Saul, and other selections; Selections from Tennyson's In Memoriam, etc.

Optional:

Selected Poems by Mrs. Browning.

Digitized by Google

Books for Home Reading.

Digitized by Google

Digitized by Google

BOOKS FOR HOME READING.

The following forty books for each year are recommended for home reading. It is hoped that each pupil, under the guidance and direction of the teacher of English, will read, out of school, ten of the forty books for each year of the course, one every four weeks. Essays or reviews of five of these books, one every two months, may be prepared by each pupil, received and criticised by the teacher and read from time to time as a part of the class exercises in English. A careful record should be kept of the books read by each pupil, and copies of the reviews written preserved in the school.

As much care should be taken to prevent the reading of too many books, as to secure a choice which shall be in accordance with the pupil's needs and tastes. The aim has not been to necessarily select the best books so called, but rather to instill a love for good reading, and to cultivate in the pupils the habit of always having a good book to read.

FIRST YEAR.

Cotter's Saturday Night—*Burns.*
Jackdaw of Rheims—*Barham.*
Snow Bound—*Whittier.*
Lays of Ancient Rome—*Macaulay.*
Lady of the Lake—*Scott.*
The Tempest—*Shakespeare.*
Wonder Book—*Hawthorne.*
Tanglewood Tales—*Hawthorne.*
Grandfather's Chair—*Hawthorne.*
Boy's King Arthur—*Lanier.*
Child's History of England—*Dickens.*
History of Germany—*Yonge.*
History of France—*Yonge.*
Autobiography of Franklin.

Digitized by Google

FIRST YEAR—CONTINUED.

Peter the Great—*Abbott.*
Tales of Shakespeare—*Lamb.*
Micah Clark—*A. Conan Doyle.*
Gustavus Adolphus—*Topelius.*
Tom Brown at Rugby—*Hughes.*
Louise's Last Term at St. Mary's—*Mrs. Harris.*
Nicholas Nickleby—*Dickens.*
Nuremburger Stove—*Ouida.*
Old Fashioned Girl—*Alcott.*
Black Beauty—*Ingall.*
Ben Hur—*Wallace.*
Man Without a Country—*Hale.*
Cudjo's Cave—*Trowbridge.*
Hans Brinker—*Dodge.*
Ivanhoe—*Scott.*
Pepacton—*Burroughs.*
Fairy Land of Science—*Buckley.*
Life and her Children—*Buckley.*
Winner's in Life's Race—*Buckley.*
Adventures of a Young Naturalist—*Biart.*
Physiology and Hygiene—*Hatfield.*
Alice in Wonderland—*Carroll.*
Water Babies—*Kingsley.*
Back of the North Wind—*McDonald.*
Sketch Book—*Irving.*
Ethics for Young People—*Everett.*
Illinois—*American Commonwealth Series.*

SECOND YEAR.

Much Ado About Nothing—*Shakespeare.*
Marmion—*Scott.*
Mazeppa—*Byron.*
Vision of Sir Launfal—*Lowell.*
Tales of a Wayside Inn—*Longfellow.*
Stories of Persian Wars—*Church.*
Short History of American Revolution (1 vol.)—*Fiske.*
Young Folk's Plutarch—*Kaufmann.*
Life of Agassiz by his Wife.
My Winter on the Nile—*Warner.*
History of the French Revolution—*Abbott.*
Julius Cæsar—*Froude.*
Bits of Travel at Home—*H. H.*
Around the World in the Yacht Sunbeam—*Brassey.*
Bulfinch's Mythology—*Hale.*
The Talisman—*Scott.*
White Company—*A. Conan Doyle.*
Twice Told Tales—*Hawthorne.*
Silas Marner—*George Eliot*
Last Days of Pompeii—*Bulwer.*
John Halifax—*Mulock.*
Kenilworth—*Scott.*
Tale of Two Cities—*Dickens.*
Maiden and Married Life of Mary Powell—*Manning.*
Rab and His Friends—*Dr. John Brown.*
Life of Washington—*Irving-Fiske.*
Study of Words—*Trench.*
Sesame and Lilies—*Ruskin.*
Walden—*Thoreau.*
Prue and I—*Curtis.*
Essay on Manners—*Emerson.*

Digitized by Google

SECOND YEAR—CONTINUED.

Politics for Young Americans—*Nordhoff.*
Chemical History of a Candle—*Faraday.*
Marvels of Pond Life—*Black.*
Geology of a Piece of Chalk—*Huxley.*
Boy Engineers—*Lukin.*
Light Science for Leisure Hours—*Tyndale.*
Innocents Abroad—*Mark Twain.*
Rudder Grange Stories—*Stockton.*
History of New York—*Irving.*

THIRD YEAR.

Legend of Provence—*Miss Proctor.*
Elegy in a Country Churchyard—*Gray.*
Rienzi (Drama)—*Miss Mitford.*
Richard II.—*Shakespeare.*
Twelfth Night—*Shakespeare.*
Morte D'Arthur—*Tennyson.*
Cry of The Children—*Mrs. Browning.*
Miss Kilmansegg—*Hood.*
American Commonwealth—*Bryce.*
Political Ideas—*Fiske.*
Rome and Carthage—*Bosworth-Smith.*
A Day in Ancient Rome—*Shumway.*
Hawthorne—*James.*
Hamilton—*Lodge.*
Irving—*Warner.*
Lectures and Speeches—*Wendell Phillips.*
History of Greece—*Oman.*
History of Rome—*Meyer.*
Walks and Talks in Geological Fields—*Winchell.*
Voyage of a Naturalist Around the World—*Darwin.*
Forms of Water—*Tyndale.*
A Century of Electricity—*Mendenhall.*
Sketches of Creation—*Winchell.*
Prophet of Great Smoky Mountain—*Craddock.*
Dombey and Son—*Dickens.*
Last of the Barons—*Bulwer.*
John Brent—*Winthrop.*
Lorna Doone—*Blackmore.*
Put yourself in His Place—*Reade*
Pendennis—*Thackeray.*
Wilfred Cumbermede—*McDonald.*
Mill on the Floss—*George Eliot.*
Vicar of Wakefield—*Goldsmith.*
Heroes and Hero Worship—*Carlyle.*
Essays in Little—*Lang.*
Queen of the Air—*Ruskin.*
Yesterdays with Authors—*J. T. Field.*
Autocrat of the Breakfast Table—*Holmes.*
Socrates, Apology, Crito, Phædo, Plato.
Lord Clive—*Macaulay.*

Digitized by Google

FOURTH YEAR.

Othello—*Shakespeare.*
King Lear—*Shakespeare.*
The Princess—*Tennyson.*
Bigelow Papers—*Lowell.*
19th Century—*Mackenzie.*
Bishop Blougram's Apology——*Browning.*
Childe Harold—*Byron.*
Life of Charlotte Bronte—*Gaskell.*
Life of Ralph Waldo Emerson—*Holmes.*
Life of Henry Clay—*Schurz.*
American Commonwealth—*Bryce.*
Twenty Years in Congress—*Blaine.*
History of Civilization—*Guizot.*
Oliver Cromwell—*F. Harrison.*
Charles Lamb—*Morley, English Men of Letters.*
Education—*Spencer.*
Human Intellect—*Porter.*
Critical Period of American History—*Fiske.*
History of Creation—*Haeckel.*
Warren Hastings—*Macaulay.*
Henry Esmond—*Thackeray.*
Rienzi—*Bulwer.*
Pride and Prejudice—*Austen.*
Adam Bede—*George Elliot.*
Window in Thrums—*Barrie.*
John Inglesant—*Shorthouse.*
Romola—*George Eliot.*
Marble Faun—*Hawthorne.*
Pickwick Papers—*Dickens.*
English Humorists—*Thackeray.*
Bacon and Milton—*Macaulay.*
Essays of Elia—*Lamb.*
Utopia—*More.*
On Style, Part I.—*Spencer.*
Conduct of Life—*Emerson.*
Day Dreams of a Schoolmaster—*Thompson.*
Selected Essays—*Lowell.*
Burns—*Carlyle.*
Crown of Wild Olives—*Ruskin.*
Wit and Wisdom of Sydney Smith.
Choice of Books—*Harrison.*

Digitized by Google

DEPARTMENT OF HISTORY.

Digitized by Google

Digitized by Google

HISTORY SYLLABUS.

INTRODUCTION.

A knowledge of history gives the student such familiarity with the great names and events of the past as enables him to understand and appreciate the references with which all literature abounds. Without such knowledge, the meaning, not only of poem and novel, but of sermon and lecture, of magazine and daily paper, becomes so greatly impoverished that were a course in history of no other value than to make this meaning fully intelligible, its worth would be quite incalculable.

But this noble study is not the mere hand-maid and servant of literature. It has other and higher provinces peculiarly its own.

It broadens and cultivates the mind by opening to its vision other lands and other ages than those in which it dwells. Thus, the historic page, easily accessible to all, presents opportunities for culture analogous to those of extended travel offered only to the few.

Higher still is the service it performs in giving the pupil a real grasp and appreciation of the great fact of civilization. He can never rightly estimate the worth of the present and its privileges till he has traced their slow and costly evolution through the long centuries of effort and attainment on the part of generations that have passed away.

But the highest service of historic study hardly ad-

Digitized by Google

mits of definite expression in words. It is the silent and gradual, but wonderful and complete, making over of the world in the mind of the thoughtful student, the revelation of a vast outlook which embraces all the races of men, all the ages of historic time. And though, under the necessary limitations of a High School course, only faint glimpses of this outlook are possible, yet these may be given in such a way that they shall be an inspiration and a guide for the study of after years.

To place these advantages within the reach of the pupil to such an extent that he may begin to understand and appreciate them, and to so train him in correct methods of study and investigation that he may avail himself of them more fully in his later reading, are the special objects of the courses adopted in the High Schools of Chicago.

These courses are three in number.

1st—*A Course in General History in the Third Year.*

So far as practicable, this will be made a study of the evolution of civilization. Over-crowding with facts simply because they are facts, will be avoided, and only those events selected for study which have been especially significant and potential in the world's historic development.

2nd—*A College Preparatory Course, also in the Third Year.*

This course will be confined to the subjects of Mythology and Greek and Roman History.

Its aim will be, not simply to enable the pupil who takes it to obtain admission to college, but also to give him that thorough familiarity with the history of Greece and Rome, that sympathetic insight into

Digitized by Google

their life, and that intelligent estimate of their work without which he cannot secure the highest results of his college study of the classics.

3rd—An Advanced Course in the History of England and the United States and Modern Europe since 1789.

This course is especially intended to show the evolution of liberty and self-government. It will trace these principles from their earliest forms among the Teutons, through their development and expansion in England and America, to their embodiment in the constitutional governments of modern Europe.

It is believed that such a course cannot fail to be of inestimable value to the young American student. It will teach him that the institutions of his country are the outgrowth of the efforts of ages; and by thus enabling him to count their cost will help him to appreciate their value.

The general plan of this course is more fully stated at the beginning of the syllabus for the fourth year.

THIRD YEAR COURSE—GENERAL HISTORY.

SEPTEMBER.

THE ORIENTAL NATIONS.

A wise economy of time will not permit the detailed study of the political history of the Oriental nations. A general knowledge, however, of their peculiar civilizations; and of the physical conditions under which they arose, is necessary, that the pupil may, at the outset of his study, form a clear conception of the world's historic beginnings, and afterwards intelligently trace the in-

Digitized by Google

fluence of these crude and early nationalities on the higher developments of Greece and Rome.

TOPICS.

		Ref. Nos.
1.	Introduction—The Historic Races	1, 2
2.	Geography of Egypt and of Western Asia	3
3.	Typical Oriental Civilizations { Egypt	5
	{ Chaldea and Assyria	4
4.	Outline View of the Succession of Oriental Monarchies	1, 2
5.	Short Sketch of the Hebrews and Phœnicians	1, 2

The reference books for the third year course are listed on pages 139, 140 and 141 of the syllabus. The small figures at the right of the topics refer to these reference books by number.

OCTOBER AND NOVEMBER.

HISTORY OF GREECE.

		Ref. Nos.
1.	Geography of Greece (cf. Asiatic and Egyptian)	3, 9
2.	The Greek Religion	6, 7, 8, 36
3.	The Heroic Age	6, 7, 8,
4.	Constitutional Changes and Colonization	9
5.	The Persian Invasions	9, 11
6.	The Age of Pericles	9, 10
7.	The Peloponnesian War	9, 11
8.	The Spartan and the Theban Supremacy	9
9.	Macedonian Supremacy and Conquests of Alexander	9, 11
10.	Division of Alexander's Empire	1, 2
11.	Short Sketch of Alexandria and the Ptolemies	1, 2
12.	Roman Conquests of Macedonia and Greece	1, 2
13.	Greek Literature, Art and Philosophy	1, 2, 9, 10
14.	Manners and Customs	1, 2, 10, 12

Omit Alexander's successors and treat topics 10 and 11 with the utmost brevity.

Digitized by Google

DECEMBER AND JANUARY.

HISTORY OF ROME.

		Ref. Nos.
1.	Geography of Italy (cf. with Greek)	35
2.	The Roman Religion	36
3.	The Roman Kingdom	1, 2
4.	Political Struggles of the Early Republic	1, 2
5.	The Conquest of Italy	1, 2
6.	Foreign Conquests—Emphasize 2nd Punic War	11, 13
7.	Period of Civil Strife—Emphasize Work of Cæsar	14, 15
8.	The Early Empire: Age of Augustus	1, 2, 11
	The Early Cæsars	1, 2
	The Five Good Emperors	1, 2
9.	Brief Sketch of the Age of Transition (3d cen.)	1, 2
10.	The Later Empire: Diocletian and Reorganization	1, 2
	Constantine and the Church	1, 2
	Barbarian Invasions and Fall of Rome	1, 2
11.	Art, Literature, Manners and Customs	1, 2, 12

FEBRUARY, MARCH AND APRIL.

MEDIÆVAL HISTORY.

Mediæval History presents great difficulties to the student because of the number and complexity of the facts which he must learn and assimilate.

In the time at our disposal, any attempt to treat the subject as the sum of the detailed histories of separate nationalities, must result in confusion and failure.

It seems, then, the part of wisdom to give up such a plan as impracticable and to concentrate attention

1st. On the great movements common to all the more important countries of Europe.

2nd. On the few especially significant facts concerning each nation which have been most potential in determining its development.

Digitized by Google

TOPICS.

The Dark Ages.

1. The Teutonic Races
   - Settlements 1, 2
   - Character 16, 17
   - Institutions 18, 19
   - Attempts at Organization 1, 2, 16
2. The Empire of Charlemagne 16, 17
3. The Rise of the Saracens 2, 11
4. Migrations and Colonies of the Northmen 2
5. Saxon England 2, 20 24, 25

THE AGE OF REVIVAL.

1. The Norman Conquest 11, 24, 25
2. Feudalism and Chivalry 21, 22, 23, 25
3. The Crusades and their Effects 23, 28
4. *Brief Sketch* of National Development in England 1, 2, 25
5. *Brief Sketch* of National Development in France 1, 2, 26, 27
6. *Brief Sketch* of National Development in Spain 1, 2
7. *Brief Sketch* of National Development in Germany 1, 2, 30
8. *Brief Sketch* of National Development in Italy 1, 2, 29
9. Mediæval Art, Literature, Manners and Customs 1, 2, 32
10. The Renaissance
    - Fall of Constantinople 1, 2
    - Invention of Printing 34
    - Explorations and Discoveries 34
    - Great Art Age in Italy 33, 34
    - The Revival of Letters in Italy 1, 2, 32, 34

MAY AND JUNE.

MODERN HISTORY.—TOPICS.

1st—Period of the Reformation.

1. Charles V. and the German Reformation 1, 2, 30
2. The Tudors and the English Reformation 1, 2, 25
3. The Huguenot Wars in France 1, 2, 26
4. The Rise of the Dutch Republic 1, 2
5. The Thirty Years' War 1, 2, 30
6. Supremacy and Decline of Spain 1, 2
7. General View of the Civilization of the Period 1, 2

Digitized by Google

2nd—Period of Political Conflict and Wars for Territorial Aggrandizement.

TOPICS.

1. Absolutism in France and French Supremacy in Europe 1, 2, 26, 27
2. The Puritan Struggle in England... .....1, 2, 25
3. The French-English Wars for European Supremacy and Colonial Possessions — Spanish Succession — Austrian Succession—Seven Years' War.....11, 25, 26, 30
4. Frederic the Great and the Rise of Prussia.....1, 2, 31
5. Peter the Great and the Rise of Russia..... 1, 2
6. General View of Europe on the Eve of the French Revolution .....Lecture Topic.

TOPICS SUGGESTED FOR LATER STUDY.

1. The French Revolution.
2. The Napoleonic Wars.
3. Rise of Modern Democracies.
4. Progress of Civilization in the Nineteenth Century.

These topics are too extensive, too difficult and too important to be taken hurriedly. Hence no attempt is made to include them in the *already crowded* syllabus for the third year. Those students who elect history in the 4th year will find them fully treated there. All others it is hoped will have acquired the desire and the power to read for themselves the wonderful story of these last mighty strides in the forward march of humanity.

For references on these topics see syllabus for the fourth year.

REFERENCE BOOKS FOR THE THIRD YEAR COURSE.

Text-book—Anderson's General History.

Short and Easily Accessible References.

1. Barnes' General History.
2. Meyers' General History.

These two books furnish valuable supplementary reading on the *whole course* and hence are not always especially referred to on *any one topic.*

Digitized by Google

ON SPECIAL TOPICS.

3. Guyot's Earth and Man.
4. Ragozin's Chaldea—Story of the Nations Series.
5. Rawlinson's Egypt—Story of the Nations Series
6. Beren's Mythology.
7. Bulfinch's Mythology.
8. Homer's Iliad and Odyssey.
9. Smith's History of Greece.
10. Hamerling's Aspasia—Selections from, on Literature and Art.
11. Creasy's Fifteen Decisive Battles.
12. Coulanges' Ancient City.
13. Bosworth Smith's Rome and Carthage.
14. Froude's Cæsar.
15. Fowler's Cæsar.
16. Emerton's Middle Ages.
17. Kingsley's Roman and Teuton.
18. Mrs. Charles' Victory of the Vanquished, Chapter I.
19. Carlyle's Heroes and Hero-Worship.
20. Hughes' Life of Alfred the Great.
21. Bulfinchs' Age of Chivalry.
22. Viollet-le-Duc's Annals of a Fortress.
23. Guizot's History of Civilization.
24. Taine's English Literature—Chapters on Saxons and Normans.
25. Montgomery's History of England.
26. Montgomery's History of France.
27. Miss Kirkland's History of France.
28. Cox's Crusades.
29. Sismondi's Italian Republics (Abridged).
30. Taylor's History of Germany.

Digitized by Google

31. Macaulay's Frederic the Great.
32. Spalding's History of Italy.
33. Mrs. Jameson's Memoirs of Italian Painters.
34. Encyclopedia Brittannica.
35. Duruy's History of Rome—Chapter I. (Excellent for Geography of Italy, but not easily accessible).
36. James Freeman Clarke's Ten Great Religions.

COLLEGE PREPARATORY COURSE—MYTHOLOGY. GREEK AND ROMAN HISTORY.

SEPTEMBER AND OCTOBER.

1. Introduction—Historic Races and Early Aryan Civilization.
2. Beren's Mythology with Selected Studies from the Iliad and Odyssey.

NOVEMBER TO FEBRUARY.

History of Greece.—*Smith.*

MARCH TO JUNE.

History of Rome—*Allen.*

For topics see those listed under Greek and Roman history for the third year. The same subjects will be treated in the College Course, but with fuller development and wider illustration from reference books.

Greater attention will also be paid to classic literature, philosophy and art.

Digitized by Google

REFERENCES ON GREECE.

1. The Iliad and Odyssey.....Bryant's Translation.
2. Guyot's Earth and Man.....On the Geography.
3. Clarke's Ten Great Religions.....On the Gods of Greece.
4. Oman's History of Greece.....On the Political History.
5. Felton's Ancient and Modern Greece. On Manners and Customs.
6. Barnes' Brief Greece, or General.....
   .....Fine print chapters on Manners and Customs.
7. Selections from Hamerling's Aspasia..On Art and Literature.
8. Creasy's Fifteen Decisive Battles...On Marathon and Arbela.
9. Epochs of Ancient History.....On Topics 3 to 10.
10. Ancient Classics for English Readers.....Collins Ed.
    Iliad and Odyssey.....On the Heroic Age.
    Æschylus.....Rise of the Drama; Greek Tragedies.
    Sophocles.....Culture in Periclean Age; Greek Tragedies.
    Aristophanes.....View of Famous Men
    and Great Public Questions; Greek Comedies.
    Herodotus.....Vivid Scenes from the Persian Wars.
    Thucydides.....Great Oration of Pericles;
    Scenes from the Peloponnesian War.
    Xenophon.....On Retreat of the Ten Thousand.
    Demosthenes.....On Philip of Macedon.
    Lucian.....On Decline of Greek Mythology.
11. Plato.....Handy Literal Translation Series.

REFERENCES ON ROME.

1. Duruy's History of Rome, 1st chap...On Phys. Geo. of Italy.
2. Clarke's Ten Great Religions.....On Gods of Rome
3. Macaulay's Lays, with Introductory Essay. On Legendary Age.
4. Coulanges' Ancient City.....On Laws and Institutions.
5. Bosworth Smith's Rome and Carthage.....On Punic Wars.
6. Froude's Cæsar..... On Cæsar and His Contemporaries.
7. Creasy's Fifteen Decisive Battles.....
   .....On Metaurus River, Teutoberg Forest, Chalons.
8. Ancient Classics for English Readers.
   Livy.....On Early Rome and Punic Wars.
   Cicero.....On Last Days of the Republic.
   Cæsar.....On the Gallic Campaigns.
   Vergil.....Story of the Æneid.
   Horace.....Roman Scenes in the Augustan Age.
9. Epochs of Ancient History.....On Topics 4 to 10.
10. Meyer's Ancient History... On Architecture and Literature.
11. Barnes' Brief Rome or Gen'l. Fine print chap. on Civilization

Digitized by Google

FOURTH YEAR COURSE.

THE HISTORY OF THE ENGLISH IDEA OF NATION MAKING.

"The English idea has come to be more than national. It has become imperial. It has come to rule and it has come to stay."
—*John Fiske.*

The fourth year course will endeavor to trace the progress of this idea throughout its long development, emphasizing especially the five following phases of its history:

1st. *The Constitutional Growth of the Idea*, from its primitive forms among the Anglo-Saxons in continental Europe, through its gradual evolution and embodiment in the institutions of mediæval and modern England.

2d. *The Conflict of the Idea with Despotism at Home* in the great seventeenth century struggle of the Puritans against the Stuarts.

3d. *The Transfer of the Idea to America* in the Puritan settlement of New England and the other colonies, *and its expansion* in the rise of the United States.

4th. *The Influence of the Idea on Modern Europe*, and its successful conflict with despotism in the wars of the French Revolution and in the great popular agitations and uprisings of the 19th century.

5th. *The Last Great Tests of the Idea* in its expansive applicability as shown in the vast territorial growth of the United States and in its moral and national vitality as noted in the conflict between the North and the South.

Digitized by Google

FALL TERM.

TOPICS.

1. Introductory Lessons on Government { in the Oriental Nations. / in Greece. / in Rome.
2. The Saxons in their Continental Homes.....1, 2, 5
3. The Saxons in England.....1, 2, 3, 5
4. The Norman Conquest and the Norman Kings.....1, 4, 5
5. Saxon and Norman Civilization..... 2, 5
6. The Feudal System..... 6
7. Constitutional Growth under the Plantagenets..... 1
   a. Magna Charta.
   b. House of Commons.
   c. Legislation and Administration of Edward I.
8. The Hundred Years' War and the Growth of National Feeling..... 1
9. The Wars of the Roses and the Drift toward Despotism 1
10. The Tudors and the English Revival of Learning..... 1
11. The Tudors and the Reformation in England..... 1
12. The Struggle with Spain and the Defeat of the Armada 1, 4
13. General View of the Elizabethan Age.....1, 2, 5

WINTER TERM.

TOPICS.

1. The Stuarts and the Puritan Movement.....1, 8, 12
2. The English Colonization of America..... 1, 8
3. The Revolution of 1688..... 1
4. The Struggle with France for European and Colonial Supremacy — a. Spanish Succession — b. Austrian Succession—c. Seven Years' War.....1, 4, 11
5. Frederic the Great and the Rise of Prussia..... 1, 13
6. Rise of the Indian Empire.....1, 14, 15
7. Colonial Development in America.....1, 8, 9
8. The American Revolution and Adoption of the Constitution.....1, 9, 10
9. The French Revolution.....19, 20, 21, 22, 23, 24, 25
10. The Napoleonic Wars.....19, 26, 27

SPRING TERM.

1. Congress of Vienna and Reconstruction of Europe..... 29
2. The Era of Reforms in England..... 1, 28
3. France from 1815 to the Present Time..... 29

Digitized by Google

4. Rise of the German Empire..... 29
5. Rise of the Kingdom of Italy..... 29
6. National Development and Constitutional and Political Movements in the United States (Lecture Topic).
7. The Civil War.
8. General View of the Development of the English Idea.

TEXT-BOOKS.

Montgomery's History of England, and such supplemental books as best treat of the specific subject under discussion.

SHORT AND EASILY ACCESSIBLE REFERENCES ON FOURTH YEAR COURSE.

1. Green's Short History of the English People.
2. Barnes' General or Mediæval and Modern History. (Fine print, chapters on Civilization).
3. Hughes' Life of King Alfred.
4. Creasy's Fifteen Decisive Battles.
5. Taine's English Literature. (Chapters on the Saxons and the Normans).
6. Viollel-le-Duc's Annals of a Fortress.
7. Carlyle's Heroes and Hero-Worship.
8. Fiske's Beginnings of New England.
9. Fiske's American Revolution. (Shorter work, one volume).
10. Fiske's Critical Period of American History.
11. Seeley's Expansion of England.
12. Frederic Harrison's Oliver Cromwell.
13. Macaulay's Frederic the Great.
14. Macaulay's Clive.
15. Macaulay's Hastings.
16. Macaulay's Pitt. (The younger Pitt).
17. McCarthy's History of the Four Georges.
18. Thackeray's Four Georges.

Digitized by Google

19. Barnes' Brief History of France.
20. Mignet's French Revolution. (Abridged).
21. Michelet's French Revolution.
22. Carlyle's French Revolution—*Selections from.*
23. Abbott's Marie Antoinette.
24. Abbott's Madame Roland.
25. Abbott's Empress Josephine.
26. Ropes' Napoleon.
27. Seeley's Napoleon.
28. McCarthy's History of Our Own Times.
29. Müller's Political History of Recent Times.
30. Epochs of Modern History.
31. Montgomery's History of France.
32. Mackenzie's 19th Century.

ILLUSTRATIVE FICTION AND POETRY.

1. Bulwer's Harold.
2. Scott's Ivanhoe.
3. The Brazen Android. Wonderful picture of the times of Roger Bacon and Simon de Montfort.—*Atlantic Monthly*, April and May, 1891.
4. Shakespeare's King John.
5. Shakespeare's Henry IV.
6. Shakespeare's Henry V.
7. Shakespeare's Richard III.
8. Bulwer's Last of the Barons.
9. Scott's Kenilworth.
10. McDonald's St. George and St. Michael.
11. Mrs. Charles' Draytons and Davenants.
12. Mrs. Charles' On Both Sides the Sea.
13. Scott's Old Mortality.

Digitized by Google

14. Thackeray's Henry Esmond.
15. The Erkmann-Chatrian National Novels. All on French Revolution from a peasant's standpoint.
16. Dickens' Tale of Two Cities.
17. Mrs. Browning's Italian Poems—
    A Court Lady.
    First News from Villa Franca.
    Forced Recruit at Solferino.
    Victor Emanuel Entering Florence.
    Napoleon III. in Italy.
    A Tale of Villa Franca.

Digitized by Google

Digitized by Google

Department of Civics and Political Economy.

Digitized by Google

Digitized by Google

SYLLABUS OF THE STUDY OF CIVIL GOVERNMENT.

This syllabus is a classification of topics under four heads, viz.: 1. Theory; 2. History; 3. Interpretation; 4. Practice. It does not indicate the order in which the topics should be taken up. In a general way it is recommended that local forms of government, beginning with the State, should be studied prior to National Government.

THEORY.

The nature and classification of rights.
Theory of government in its relation to rights.
Social contract theory of government and the historical theory that has replaced it.
Typical forms of government with illustrations.
Monarchies—absolute and constitutional.
Federal government.
Republican and Democratic governments.
Classify the functions of government.
Fundamental and statute law.
Theory of a constitution.
The executive and the military power.
The judiciary in its relation to law and constitution.
The legislature and the manner of its selection.
Naturalization, citizenship, and suffrage.
District and general ticket methods of election.
Gerrymandering.

Digitized by Google

The spoils system and civil service reform.
Theory of public educational systems.
Taxation—theory and methods.
The non-political character of municipal government.
Relations between national, state, and local governments.
The principle of the *referendum*.
Defects of our existing governments, and reforms that seem desirable.

HISTORY.

Origin and history of local government.
Family, clan, tribe, and kingdom.
The primitive village community and the modern town.
The city-state of the Greeks and Romans.
History of the county.
Town and county forms of local government in America.
Magna Charta and Bill of Rights.
Colonization of America.
Relation of the colonies to King and Parliament.
Governments of the colonies.
Connecticut Constitution of 1639.
The Continental Congresses.
Articles of Confederation.
The critical period following the Revolutionary War.
The Convention and the Constitution.
History of the constitutional amendments.
Important episodes in our first century of national history.
Louisiana purchase; other purchases of territory.

Digitized by Google

Bank of the United States.
Nullification.
Growth of the slave power.
Civil war and reconstruction.
Impeachment of Andrew Johnson.
Disputed election of 1876.

Illinois constitutions of 1818, 1848 and 1870.

History of the city of Chicago.

Political parties in the United States and their fundamental aims.

INTERPRETATION.

Study of the text of the United States Constitution and of portions of Illinois Constitution.

Interpretation of national and state law.

Dead letters of the United States Constitution.

Strict and loose constructionist theories of interpretation.

PRACTICE.

Workings of town, city, county, state, and national governments.

Points of contact between individual citizens and government.

Method of assessing and collecting a year's taxes.

Surveying system of the West.

The Australian ballot and its advantages.

Duties of the citizen.

Eternal vigilance the price of liberty.

Digitized by Google

SYLLABUS OF THE STUDY OF ECONOMICS.

ECONOMICS considered as a Science.
- Subject-matter and fundamental definitions.
- Relation of economics to ethics and government.
- Divisions of the subject.

PRODUCTION and its primary agents.
- Natural agents.

LAND and the law of diminishing returns.
- Historical survey of land tenure.
- Arguments for and against private ownership.
- Size of land holdings.
- The unearned increment.

LABOR: What it is and what it accomplishes.
- Differences in industrial efficiency.
- Division of labor: advantages and limitations.
- Manufacturing, commerce, agriculture.

CAPITAL: Definition and origin.
- Forms of capital: Materials, tools, and sustenance.
- Fixed and circulating capital.
- Coöperation of labor and capital.
- General distribution of capital: means of securing this.
- Tendency of capital to accumulate.
- Cost of production in its relation to value.
- Normal values regulated by production at greatest disadvantage.
- Over-production.
- Trusts and monopolies.

Digitized by Google

EXCHANGE: Its nature and scope.
Primitive methods of exchange.
Money and its functions.
Forms of money.
Essential qualities of money.
Gold and silver as money-metals.
Origin, growth, and function of credit.
The tabular standard of value for deferred payments.
Monometallism and bimetallism.
Banks and their functions.
Bank money.
Domestic and foreign exchange.
Paper or "political" money.
Gresham's law.
History of money in the United States.
Monetary problems of the present day.
Free and restricted exchange between nations.
DISTRIBUTION: The general problem.
Rent and its origin.
The law of rent.
The law of diminishing returns.
Effects of increasing population.
Interest and profits.
Wages of superintendence.
Principles governing the rate of interest.
Usury legislation.
Wages and their economic character.
Real and nominal wages.
Real and nominal cost of labor.
Differences in the efficiency of labor.
High efficiency of labor in this country.
Special circumstances affecting wages.

Digitized by Google

The standard of living.
The natural limits of wages.
The wages-fund theory.
Relation of wages to prices.
The organization of labor.
Strikes and lock-outs.
The principles of taxation.
Socialism and distribution.
Coöperation and profit-sharing.
Outlook for the laboring classes.

CONSUMPTION and its objects.
The evils of luxurious consumption.
Principles of productive consumption.
National consumption.

Digitized by Google

COURSES OF STUDY.

Adopted August 17, 1892.

FOUR YEARS GENERAL COURSE.

First Year.

First Term.	*Second Term.*	*Third Term.*
Latin (4).	Latin (4).	Latin (4).
or German (4).	or German (4).	or German (4).
or French (4).	or French (4).	or French (4).
or Spanish (4).	or Spanish (4).	or Spanish (4).
Rhetoric and English Composition (3).	Rhetoric and English Composition (3).	Rhetoric and English Composition (3).
Algebra (4).	Algebra (4).	Algebra (4).
Biology (4).	Biology (4).	Biology (4).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1)	Vocal Music (1).

Second Year.

First Term.	*Second Term*	*Third Term.*
Latin—Cæsar (4).	Latin—Cæsar (4).	Latin—Cæsar (4).
or German (5).	or German (5).	or German (5).
or French (5).	or French (5).	or French (5).
or Spanish (5).	or Spanish (5).	or Spanish (5).
English Classics and Essays (2).	English Classics and Essays (2).	English Classics and Essays (2).
Geometry (4).	Geometry (4).	Geometry (4).
Physics (4).	Physics (4).	Physics (4).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Third Year.

First Term.	*Second Term.*	*Third Term.*
Latin—Cicero (4).	Latin—Cicero (4).	Latin—Cicero (4).
or German (5).	or German (5).	or German (5).
or French (5).	or French (5).	or French (5).
or Spanish (5).	or Spanish (5).	or Spanish (5).
Chemistry (4).	Chemistry (4).	Chemistry (4).

Digitized by Google

Third Year—Continued.

First Term.	*Second Term.*	*Third Term.*
General History (4).	General History (4).	General History (4).
History of Literature, English Classics and Essays (2).	History of Literature, English Classics and Essays (2).	History of Literature, English Classics and Essays (2).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
Solid Geometry and Plane Trigonometry (4).	Plane Trigonometry and Bookkeeping, or Higher Algebra (4).	Bookkeeping or Higher Algebra (4).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Fourth Year.

First Term.	*Second Term*	*Third Term.*
Latin—Vergil (4). or German (5). or French (5). or Spanish (5).	Latin—Vergil (4). or German (5). or French (5). or Spanish (5).	Latin—Vergil (4). or German (5). or French (5). or Spanish (5).
Geology (4).	Geology (4). Astronomy (4).	Astronomy (4).
Civil Government (3).	Political Economy (3).	Political Economy (3).
History of Literature, Biographical Sketches and Book Reviews (3).	History of Literature, Biographical Sketches and Book Reviews (3).	History of Literature, Biographical Sketches and Book Reviews (3).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
History (4).	History or Psychology (4).	History or Psychology (4).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Pupils will be permitted to elect studies of this Course required for admission to the Colleges for which they are preparing.

The figures opposite studies indicate the number of recitations each week. Full time consists of eighteen hours a week, including two for Drawing and one for Vocal Music.

COLLEGE PREPARATORY COURSE.

First Year.

First Term.	*Second Term.*	*Third Term.*
Latin (4). or German (4). or French (4). or Spanish (4).	Latin (4). or German (4). or French (4). or Spanish (4).	Latin (4). or German (4). or French (4). or Spanish (4).

Digitized by Google

First Year—Continued.

First Term.	Second Term.	Third Term.
Rhetoric and English Composition (3).	Rhetoric and English Composition (3).	Rhetoric and English Composition (3).
Algebra (4).	Algebra (4).	Algebra (4).
Biology (4).	Biology (4).	Biology (4).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Second Year.

First Term.	Second Term.	Third Term.
Latin—Cæsar (4). or German (5). or French (5). or Spanish (5).	Latin—Cæsar (4). or German (5). or French (5). or Spanish (5).	Latin—Cæsar (4). or German (5). or French (5). or Spanish (5).
Greek (4).	Greek (4).	Greek (4).
Geometry (4).	Geometry (4).	Geometry (4).
English Classics and Essays (2).	English Classics and Essays (2).	English Classics and Essays (2).
Physics (4).	Physics (4).	Physics (4).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Third Year.

First Term.	Second Term	Third Term.
Latin—Cicero (4). or German (5). or French (5). or Spanish (5).	Latin—Cicero (4). or German (5). or French (5). or Spanish (5).	Latin—Cicero (4). or German (5). or French (5). or Spanish (5).
Greek—Anabasis (4).	Greek—Anabasis (4).	Greek—Anabasis (4).
Mythology, Grecian History (4).	Grecian History, Roman History (4).	Roman History (4).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
Greek Prose Composition and Greek at Sight (1).	Greek Prose Composition and Greek at Sight (1).	Greek Prose Composition and Greek at Sight (1).
Chemistry (4).	Chemistry (4).	Chemistry (4).
History of Literature, English Classics and Essays (2).	History of Literature, English Classics and Essays (2).	History of Literature, English Classics and Essays (2).
Solid Geometry and Plane Trigonometry (4).	Plane Trigonometry and Higher Algebra (4).	Higher Algebra (4).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Digitized by Google

Fourth Year.

First Term.	*Second Term.*	*Third Term.*
Latin—Vergil (4). or German (5). or French (5). or Spanish (5).	Latin—Vergil (4). or German (5). or French (5). or Spanish (5).	Latin—Vergil (4). or German (5). or French (5). or Spanish (5).
Greek—Anabasis and Iliad (4).	Greek—Iliad (4).	Greek—Iliad (4).
History of Literature, Biographical Sketches and Book Reviews (3).	History of Literature, Biographical Sketches and Book Reviews (3).	History of Literature, Biographical Sketches and Book Reviews (3).
Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).	Latin Prose Composition and Latin at Sight (1).
Greek Prose Composition and Greek at Sight (1).	Greek Prose Composition and Greek at Sight (1).	Greek Prose Composition and Greek at Sight (1).
History (4).	History (4).	History (4).
Mathematics reviewed (2).	Mathematics reviewed (2).	Mathematics reviewed (2).
Drawing (2).	Drawing (2).	Drawing (2).
Vocal Music (1).	Vocal Music (1).	Vocal Music (1).

Pupils will be permitted to elect studies of this Course required for admission to the Colleges for which they are preparing.

The figures opposite studies indicate the number of recitations each week. Full time consists of eighteen hours a week, including two for Drawing and one for Vocal Music.

STUDIES IN ENGLISH.

This Course applies to both the Four Year General and College Preparatory Courses.

First Year.

First Term.	*Second Term.*	*Third Term.*
Required—Hawthorne's Tales of the White Hills. *Optional*—Burroughs' Roof Tree; Addison's Spectator Papers, selected; Lamb's Essays of Elia, selected; Irving's Sketch Book, selected.	*Required*—Five short poems of Bryant; (Conqueror's Grave; Robert of Lincoln; Blue Gentian; Wind and Stream; To a Waterfowl); Holmes' Chambered Nautilus. *Optional*—Scott's Lady of the Lake; Gold-	Shakespeare's Merchant of Venice, or Midsummer Night's Dream.

Digitized by Google

First Year—Continued.

Second Term.

smith's Deserted Village; Browning's Pied Piper; Lowell's My Garden Acquaintance; The Old Manse, from Hawthorne's Mosses from an Old Manse; Webster's First Bunker Hill Oration; Lincoln's Gettysburg Address; Washington's Farewell Address, and Rules of Conduct.

Second Year.

First Term.	*Second Term.*	*Third Term.*
Required — Beren's Mythology (to be used as a hand-book throughout the year). Selections from the Iliad or the Odyssey; Alcestis or Antigone. *Optional*—Morris' Life and Death of Jason: Æschylus and Sophocles, volumes in the series of "Ancient Classics for English Readers." Plato's Apologia and Phaedo.	*Required*—Macaulay's Lays of Ancient Rome; The Æneid, Books I and VI. *Optional*—The Nibelungenlied; Shakespeare's Julius Cæsar.	*Required*—Lowell's Vision of Sir Launfal. *Optional*—Tennyson's Sir Galahad and the Holy Grail.

Third Year.

First Term.	*Second Term.*	*Third Term.*
Required—Tennyson's The Coming of Arthur, Elaine, Guinevere, The Passing of Arthur; Chaucer's Prologue. *Optional* — Chaucer's Knight's Tale; Selected English Ballads.	*Required*—Shakespeare's Macbeth, or As You Like It. *Optional*—Spenser's Faerie Queene, First Canto; Bacon's Essays. Milton's L'Allegro and Il Penseroso.	*Required*—Paradise Lost (Book I). *Optional*—Dryden's Alexander's Feast.

Digitized by Google

Fourth Year.

First Term.	*Second Term.*	*Third Term*
Required—Shakespeare's Hamlet; Poems of Robert Burns; Macaulay's Essay on Johnson. *Optional*—Pope's Rape of the Lock, or Essay on Man; Addison's Sir Roger de Coverley Papers. Gray's Bard, and Elegy in a Country Churchyard.	*Required*—Selected Poems of Wordsworth. Selections from Carlyle's Heroes and Hero Worship. Emerson's Behavior and Culture, or Social Aims. *Optional*—Keats' Eve of St. Agnes. Selected Poems by Shelley; Coleridge's Ancient Mariner. Selections from Books III and IV of Byron's Childe Harold. Introduction of Study of Ruskin, or Ruskin's Sesame and Lilies.	*Required*—Browning's Saul, and other Selections from Browning. Selections from Tennyson's In Memoriam, etc. *Optional*—Selected Poems by Mrs. Browning.

COURSE OF INSTRUCTION IN GERMAN.

For the Course of Instruction in German, see the Syllabus in German on page 35, where will be found both a course for beginners and for advanced pupils, as well as selections for reading.

COURSE OF INSTRUCTION IN FRENCH.

Selections from the following reading course are to be made by the authority of the Superintendent:

Readings.

First Year.	*Second Year.*
Perrault, Contes de Fées.	Erckmann-Chatrian, L'Ami Fritz.
About, La Mère de la Marquise.	Enault, Le Chien du Capitaine.
Halevy, Un Mariage d'Amour.	Labiche, Le Voyage de Monsieur Perrichon.
Ohnet Le Chant du Cygne.	Comte de Vervin, Deux Artistes en Voyage.
Daudet, Le Siege de Berlin (Edition with Grandgent's English Exercises).	Rougemont, La France.
	Sandeau, Mademoiselle de la Seigliere.
	Lavisse, Histoire de France (Reference Book).
	Erckmann-Chatrian, Le Conscrit de 1813.
	De Lamartine, Jeanne d'Arc.

English to French.

Digitized by Google

Third Year.

Revue des Deux Mondes, La Neuvaine de Colette.
Dumas, La Tulipe Noire.
Julliot, Mademoiselle Solange.
De Lamartine, Graziella.
George Sand, La Mare au Diable.
Prosper Mérimée, Colomba.
Xavier de Maistre, Voyage autour de ma Chambre.
Hugo, Bug Jargal.
Fontaine, Historiettes Modernes.
English to French.

Fourth Year.

Hugo, Hernani.
Racine, Athalie, Andromaque, Esther, Iphigenie.
Molière, L'Avare.
Hugo, Quatre-vingt-treize.
Corneille, Le Cid, Horace, Cinna.
Victorien Sardou, La Perle Noire.
Hector Malot, Sans Famille.
De Maupassant, Contes et Nouvelles.
Molière, Le Bourgeois Gentilhomme.
Molière, Le Médecin Malgré Lui.
English to French.

COURSE OF INSTRUCTION IN DRAWING.

Free Hand Drawing.

First Year—Sketching of Solids from the object.
Perspective Shades and Shadows.
Second Year—Composition of Ornaments, beginning with the elementary geometrical forms, to the advanced floral and composite designs, executed in water colors.
Primary and secondary colors. Harmony in colors.
Third Year—Sketching with Charcoal and Brush from Objects, Plaster, Still life, etc.
Fourth Year—Crayon, India Ink, Sepia, Pastelles and Water Colors.

Mechanical Drawing.

First Year—Geometrical Constructions.
Second Year—Descriptive Geometry (Projection).
Third Year—Descriptive Geometry and Parallel Perspective.
Fourth Year—Conic Perspective, Shades and Shadows, and application of the above to Mechanics and Architecture.

Digitized by Google

General Instructions.

Pupils will receive credits of advancement after all final tests which are successful. A pupil successfully pursuing a study one entire year will be entitled to one credit; fractional credits will be given for studies occupying less than one year. No credit, however, will be given to any pupil who fails to pass the final test in any study. Fifteen credits will be required for graduation, which shall include two credits for Drawing and one credit for Vocal Music. Pupils who are excused from Drawing, or Vocal Music, or both, must make up credits so lost by work along other lines.

Pupils preparing for College will also be required to obtain fifteen credits, in order to receive a diploma of graduation, but when a pupil shall have accomplished all the requirements for admission *to any accepted College*, and shall have expressed an intention to enter such College and pursue a course of study therein, he shall be entitled to a diploma.

The General Course will consist of three studies, full time, five recitations a week, for four years, besides Drawing and Vocal Music, of which studies, one Foreign Language, Algebra, Plane Geometry, two Sciences, and two full years of English will be required.

Digitized by Google

Digitized by Google

Digitized by Google

UNIVERSITY OF MICHIGAN
3 9015 06278 6564

Digitized by Google

Digitized by Google